ROAD and TRACK

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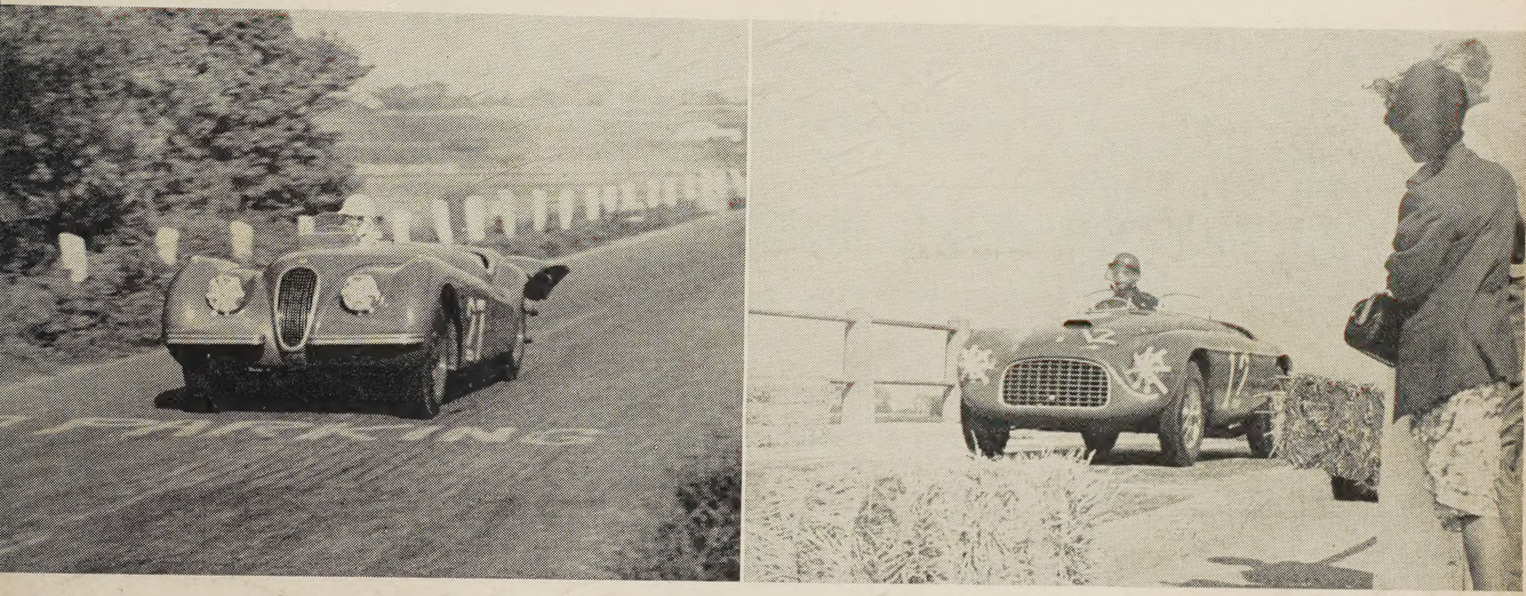

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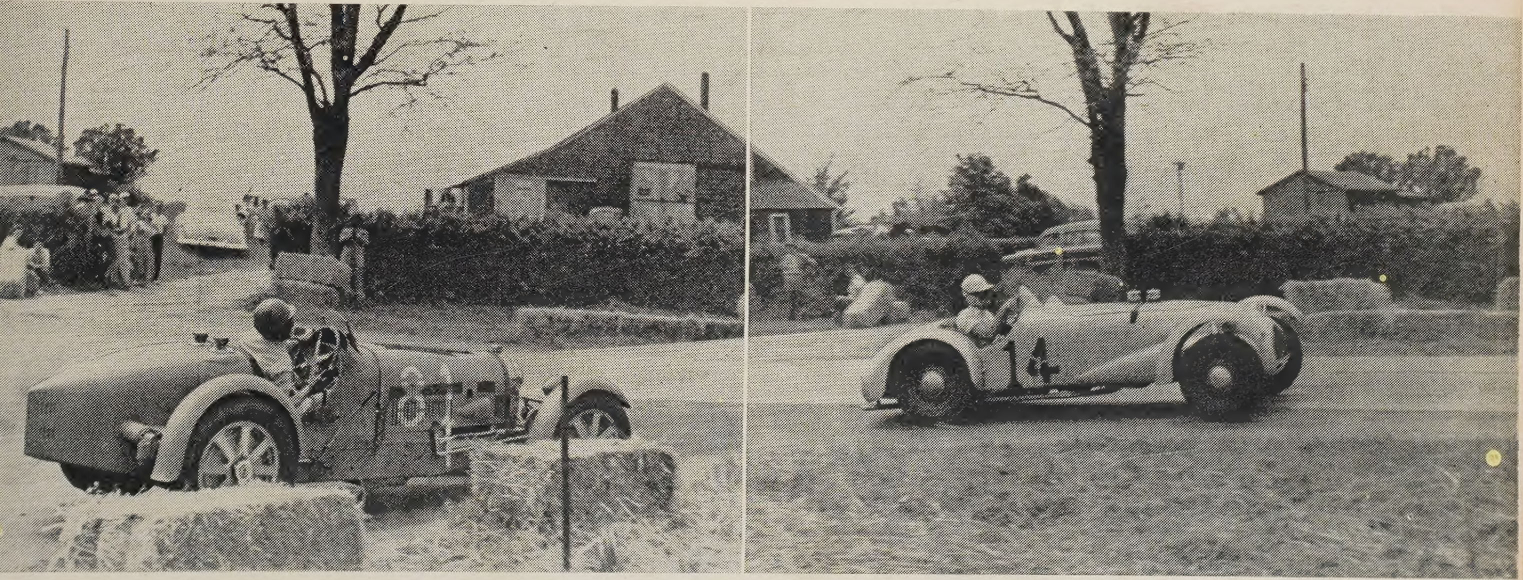

ROAD RACE DETAILS
ON PAGE 4

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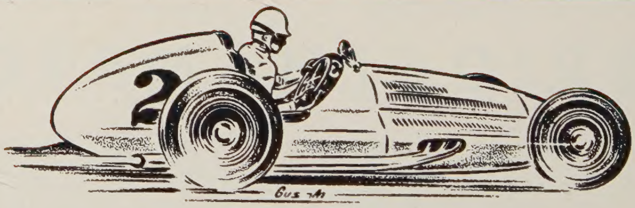

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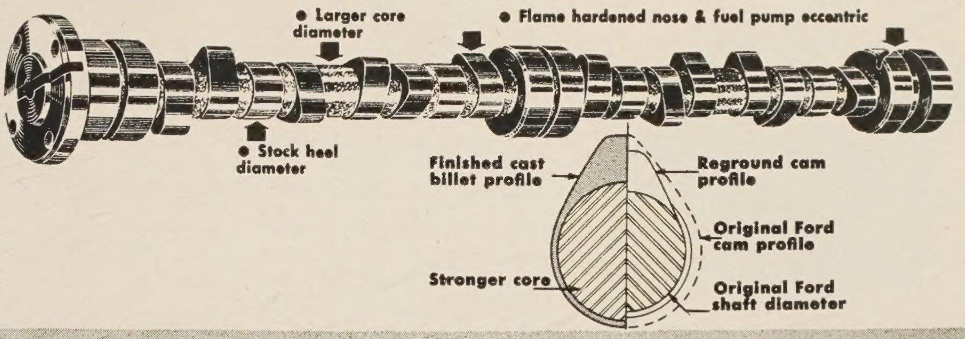
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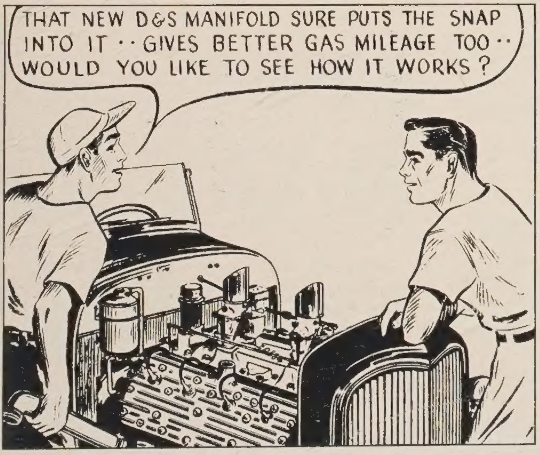
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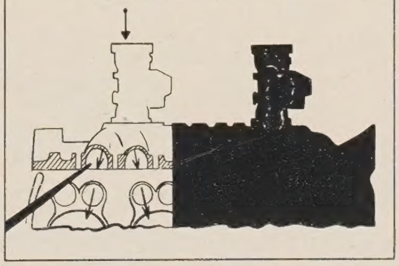

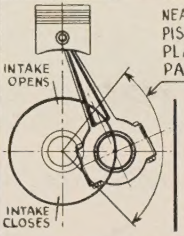

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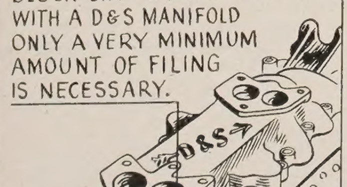

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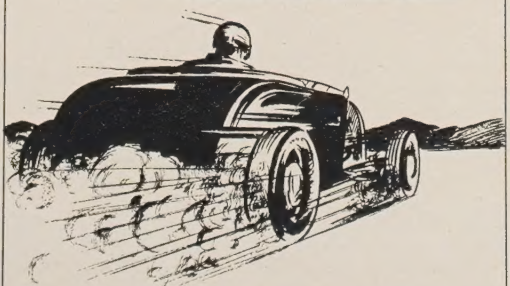

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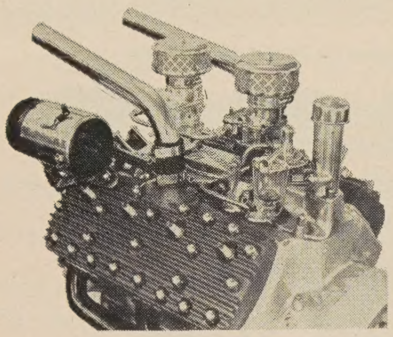

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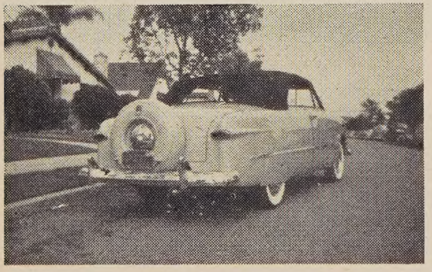

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CORRESPONDENCE

LONG-STROKE M.G.

Dear Sir: (Attn: John Bond)

Some confusion concerning the M.G. TB seems to exist. The TB was not one of the "long stroke" engines. It had the same engine as the TC and TD but had the old and infinitely better trunnion way of mounting the springs. The engine to which you undoubtedly refer is the MPJG, as used in the TA car, first made in '36.

I doubt if it would be possible to use the TA crank for a number of reasons, mainly because there is not enough clearance for a shaft with a half inch more throw, and likely "reliefs" for rod clearance at the bottom of the bores would be required. The problem of low crowned pistons whose rings would remain covered at both ends of the stroke would be a possibility. Your rear main, discounting size, would also present a problem, since on the TA, the oil leak-off was to the rear, due to the fact that a "wet" cork lined clutch was used. That clutch is a joy that no modern M.G. owner will ever know.

I believe that the XPAG engine is a better unit for all practical purposes, than the older type, but having owned four TA's here and overseas, I have an enormous respect for the long engines. Safe limits as concerns revs, was set at a top of 5 thousand, but of course, in racing practice, much higher readings were obtained. For road use, the gear ratio was 4.875 as opposed to 5.125 in the TB,C and D.

Another point—TC vs. TD. Since the engines are identical, I feel it will not be a simple matter to attain the rpm you mention, since peak is still at 5250 rpm, and hp and torque are even then on the decline. Also, there is additional rolling friction from the doughy tires and a resultant loss in hp at the wheels, from using a hypoid type diff, over the old spiral bevel. Small items when dealing in hundreds of "Horse", but with fractional horse power units, a difference is felt on the stop watch.

I believe that something like the 1500cc (or even the 1¾ liter) Lea Francis engine would be ideal in the M.G. chassis. I own one of the L DH Model Leafs and rate it a vast improvement over the M.G. The twin cam engine is a joy and can be made to deliver BHP in large quantities. At various places in the country it has given the Offies a very good run in the Midgets. The Connaughts.

Roy W. Parr

Rhode Island

A 1949 Chevrolet engine peaks at 3300 rpm (as installed, per Automotive Industries*) and does 83 mph (per* Autocar*) or approximately 4210 rpm—considerably over the peak rpm. A TD at 92 mph and 5600 rpm is only 350-400 rpm over the "peak" and the curve still shows 47 BPH at 6000, so I think the higher TD mph is somewhat plausible (tho not conclusive) on this basis.*

Your points re rolling resistance of the ELP tires and hypoid rear are well taken. However, I'll bet both Motor *and* Autocar *used higher pressures during the timed runs which would nullify the tire loss. Rear axle and transmission losses are actually much less than is popularily believed, between 1% and 2% in the "indirects", and about the same in the "bevels". The total gearing losses are never taken as over 5%, and the difference between a spiral bevel and a hypoid is very negligible but can actually be estimated by using the slightly higher oil temperatures as indicative of more friction.—Tech. Ed.*

LONG AND SHORT MILES

Dear Sirs:

Just a brief note of thanks for and "on" your April issue—it's a wow!

Re: the variety of readings on the odometers of the Mobiloil Economy Run cars perhaps I may be able to shed a little light? In 1938-39 I was employed as a seismograph surveyor. Part of our equipment was a recording odometer installed in our survey truck and which was supposed to accurately measure the distance traveled ("chained").

Mechanically, this gadget was o.k. but road conditions, tire pressure, atmospheric pressure and temperature could effect accuracy as follows: A surveyed distance (one measured mile) was laid off along a level, smooth, and deserted highway and the tires all inflated to 35 pounds (6.00 x 16). The air temperature was recorded and then the pickup (Ford V-8) was driven very carefully (15 mph) over the measured mile on, (A) the paved highway and then, (B) along the dirt shoulder. The odometer was checked against the measured mile in each direction and recorded. Now, tires were deflated by one pound—all tires @ 34 lbs. and the trick repeated . . . 33-32-31-etc. down to and including 25 lbs./sq. in. Twenty-two miles were driven—eleven round trips each way—½ on dirt and ½ on pavement. The net result (providing mechanical equivalents were correct): an accurate odometer reading for a 6.00 x 16 inch tire was obtained at 31 lbs./sq. in. under the given conditions that existed *then!*

Now, picture 31 cars, 31 *different* tire pressures, 31 *different* drivers, not to mention the various and varying coefficients of friction (call it slippage) at around 41 mph average and all the different tire sizes plus odometer mechanical errors and it's no wonder that the readings varied from 796.9 miles to 738 miles or 58.9 miles. (Had our specially equipped Survey pickup "clocked the distance," the largest maximum error allowable at 20 feet per mile or 751 miles x 20 feet would = 15,020.00 or 2.84 miles!)

Actually, we could measure 1 mile by mechanical odometer attachment to 1/1000 of a mile or .001 x 5,280=5.28 feet! So, I can prove that any *cop* that clocks my Cadillac *doesn't* know how fast he's going and since he doesn't know, how can (or do) I?—unless we check our speedometers, tire size, and tire pressure (corrected for atmospheric pressure, temperature, humidity, etc.)?

If we want to get technical, call in a "collich" physics prof. and he'll explain the various laws related to tire volume, pressure, temperature, and distortion (size) due to the various forces at work on a revolving tire!

Ralph S. Fralick

Miami Beach, Florida

AUSTIN A-40 RECORDS

Gentlemen:

In reference to the recent run on Suffolk County Airport by the Austin A-40 I think it should be made clear that Austin did not "break 36 stock-car records". Records never existed in this country for Class F closed cars, so all Austin did was to set up these

CORRESPONDENCE

(Continued)

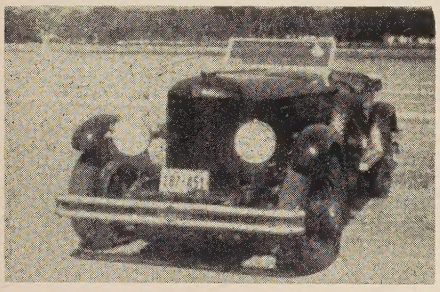
records. They could have run the distance at a snail's pace and still claim the same "records".

Messrs. Austin, Ltd. are not being too honest with the American public in their advertising anyway. Much fanfare was made by Austin over their 7-Day 70 mph average run at Indianapolis Speedway eariler this year. The very important thing which was over-looked in ballyhooing this "feat" was the fact that it required TWO engines to do it!

Bob Gegen

Miami, Florida

Road and Track's title was in error—the A-40 records were established in a class where no previous records existed. But, almost half of all American records are in the same status. The A-40 record for the standing mile is faster than the standing mile for Class D, now held by Hudson, and at 500 kilometers was only 4.25 mph slower than the much larger Hudson. Hardly a "snail's pace"! —ED.



LE MANS DU PONT

Dear Sir:

. . . This speedster was made by E. Paul du Pont at Wilmington, Delaware in 1930. These cars were designed to meet the requirements of the LeMans race where they raced for one year, or possibly two. While traveling at high speed one car hit a hard bump—the large extra gas tank, mounted on the rear floor, went thru the boards and bent the drive-shaft. The other du Pont was involved in a crack-up. Both cars were doing well until the accidents.

The wheel base is 126 inches and the engine about 350 cubic inches. You will note the beautiful Marchall head lamps and the absence of doors on the left side. It handles very nice.

George A. Barker

Washington, D. C.

A stock du Pont chassis, with racing body fitted, ran in the 1930 Indianapolis "500". With a displacement of 322 cu. in., it qualified at 89.7 mph and was eliminated when it hit the wall on the 22nd lap... —ED.

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INTERNATIONAL GRAND PRIX, AMERICA

Now that road racing is definitely on the return in America, thanks to enthusiastic sports car organizations, it is not too early to think of the future in terms of International competition. Already, Watkins Glen is on the Calendar and famous foreign drivers will compete in the 1950 event. Why not plan now for an International Grand Prix, to be run in America, with an assemblage of the world's greatest cars and drivers, and to eclipse *all* races in scope, size, and glory? We have the money, the potential supporters, and spectators by the millions. Sufficient enthusiasm, and a definite plan such as proposed in "Proving Ground Speedways" on page 10, would make the International Grand Prix possible.

WHY JULY-AUGUST ?

Beginning with this issue, Road and Track will be available on the newsstands in all of the principal cities of the United States and in other countries thruout the world. Improved circulation has been made possible by the appointment of the Kable News Company as national distributors for Road and Track.

To allow sufficient time for shipment to distant points, it is necessary to advance the publication date by several weeks. This may best be accomplished by designating this issue as "July-August." The next issue will be "September" and will appear after the normal 30 day period. All subscriptions received prior to this date will be extended for an additional month to compensate for the dual date on this issue.

July-August, 1950 Vol. 2 No. 1

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B. H. Hannaway in M.G. TD #28 leads Zagato Fiat and pack of M.G.s in First Race.

—PHOTO BY CHARLES LYTLE

BRIDGEHAMPTON

COLE WINS IN CADILLAC-ALLARD

By Perry Boswell, Jr., and

John Franklin Fellows

A Cadillac-engined J-2 Allard, superbly driven by T. L. H. Cole, Jr., of New York City was "car-of-the-day" at the annual Bridgehampton, Long Island, Sports Car Road Races on June 10. In a 10-lap large car race, it showed its exhaust to sundry Ferraris, Jaguar XK-120's, a hot Frazer-Nash and road cars containing hot Ford and Mercury equipment. In the 20-lap, 80-mile feature race, it lapped almost everything entered, including two Jaguars and George Weaver's supercharged 3-liter Maserati. The only cars able to give the "Cadilard" any kind of competition were the two Ferraris, a Ford-Duesenberg and the Frazer-Nash. The "Cadilard" ran the curvaceous, wash-board course at an average speed of nearly 80 mph, hitting as high as 130 mph on the straightaways.

Fastest lap of the day, however, was that of Sam Collier, Florida sports car driver, in a Ferrari owned by Connecticut's Briggs Cunningham. The Ferrari did the 4 mile run in 2 minutes and 56 seconds and placed second in the feature event. George Huntoon, also of Florida, placed third in the Ford-Duesenberg owned by I. J. Brundage, Miami sportsman. Jim Kimberly of Chicago, driving his own spanking new Ferrari placed fourth; and Lawrence Kulock of New York, driving his own Frazer-Nash placed fifth. (In the opinion of the writers, the latter two drivers, comparatively inexperienced in this hot league, deserves kudos for driving so well. For, while the "Cadilard" showed everyone the way, the Ferraris and the Frazer-Nash have 2-liter engines against more than five for the "Cadilard"; and the De Dion rear end of the latter car gave it a definite edge on the wash-board section of the course.

Preceeding the feature race were two 10-lap races, each being divided into two classes. Each event was hotly contested by an interesting variety of cars.

An estimated 20,000 people saw the races under blue skies. Bridgehampton police and hard-working officials of the Motor Sports Club, the M.G. Car Club and the Sports Car Club of America are to be congratulated for running four races in one day with no accidents either to drivers or spectators.

Added attractions of the day included a two-lap antique car demonstration race, with Charley Addams of *New York Magazine* fame as the star attraction in his ancient Mercedes-Benz; and a pace lap of the feature race led by motion picture star Robert Montgomery.

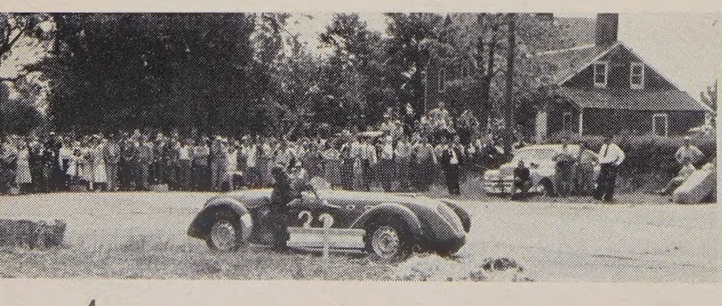
RESULTS

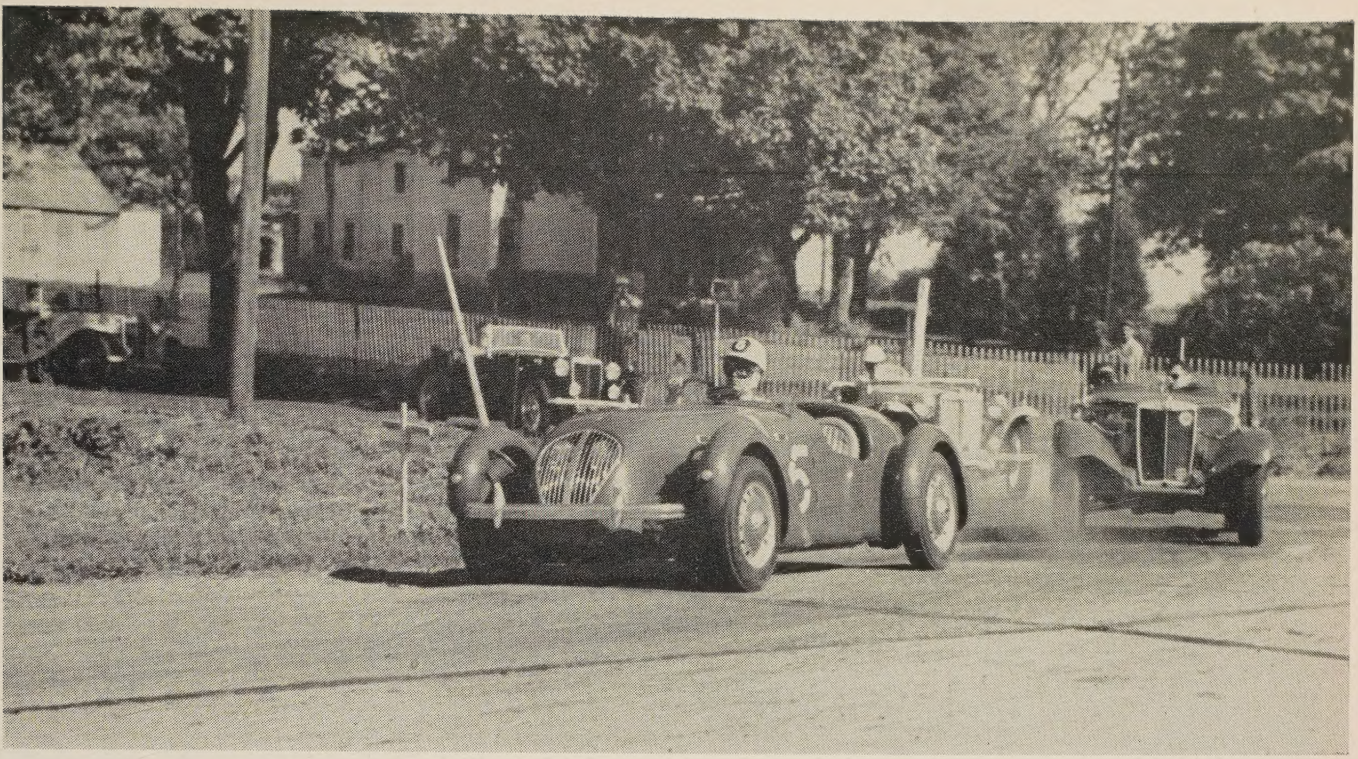
Main Event		**20 Laps—80 Miles**
1. T. L. H. Cole, Jr.	1 ;00 :19	Cad-Allard
2. Sam Collier		Ferrari
3. George Huntoon		Ford-Duesenberg
4. James Kimberly		Ferrari
5. Larry Kulock		Frazer-Nash
First Race		**10 Laps—40 Miles**
Class G 750 cc to 1100 cc		
1. Logan Hill		Cisitalia
2. James Pauley		Cisitalia
3. Antonio Pompeo		Cisitalia
Class F 1100 cc to 1500cc		
1. Miles Collier	35 :17.9	M.G. P.B.
2. Fred Koster		H.R.G.
3. M. G. Richard		M.G.
Second Race		**10 Laps—40 Miles**
Class E 1500 cc to 2000 cc		
1. Sam Collier	31 :21.9	Ferrari
2. James Kimberly		Ferrari
3. Larry Kulock		Frazer-Nash
Class D 2000 cc to 3000 cc		
1. Fred Wacker, Jr.		Healey
2. Antonio Pompeo		Alfa-Romeo
3. John C. Fitch		Fitch Bitch
Third Race		**10 Laps—40 Miles**
Class B 5000 cc to 8000 cc		
1. T. L. H. Cole, Jr.	30 :55.2	Cad-Allard
2. Bruce Stevenson		Meyer Special
3. George Huntoon		Ford-Duesenberg
Class C 3000 cc to 5000 cc		
1. Miles Collier		Ford-Duesenberg
2. Jack Rutherford		Ford-Riley
3. Paul Ceresole		Jaguar XK-120

At left—Harry Gray takes fast turn in Healey Silverstone shortly before he slid into hay bales and overturned.

At right—Jack Rutherford's XK-120 (#27) lifts nose as it accelerates from corner. Number 72 is W. L. Stocklin in Bugatti.

—PHOTOS BY STEVE LANSING





ROAD RACE 1950

Fred Wacker, Jr., in James Kimberly's Healey Silverstone is tailed by crowd of M.G.s.

—PHOTO BY STEVE LANSING

KEY TO COVER PHOTOGRAPHS

1. J. Rutherford in Jaguar XK-120 at speed.
2. J. Kimberly crosses bridge in new Ferrari.
3. Dr. Scher's Bugatti with B. Milliken driving.
4. Winner T. L. H. Cole in Cad-Allard J-2.

PHOTOGRAPHY BY CHARLES LYTLE

Additional Notes by Perry Boswell, Jr.

First Race: Prizes to 1-2-3 in each class; consolidated classes 750-1100 and 1101-1500 cc. Otto Linton of Eyton, Pa. out at the start, driving Dr. S. Scheer's chain drive Frazer-Nash; broken flywheel.

First lap: Logan Hill driving blue Cisitalia Sport coupe, with Jim Pauley in a red Cisitalia coupe closing rapidly.

Second lap: Hill and Pauley still leading the M.G.s with Miles Collier coming thru the field from scratch position at the start to 4th, and gaining on the leaders.

Third lap: Collier went into the lead. The car is Milliger's beautiful little blown 1935 PB M.G. Special. Hill made Collier keep moving and was always in attack. A few more horses might have made a difference.

Pompeo had only about 100 run-in miles, put in the afternoon before the race, on an engine overhaul. The Boswell Cisitalia, with Offy-midget engine, was scratched at the line because of fuel pump failure.

Half race positions were

1st, M. Collier, M.G. Spl.
2nd, Logan Hill, Cisitalia
3rd, F. Koster, HRG
4th, Pauley, Cisitalia
5th, M. G. Richards, M.G.
6th, E. V. Curtiss, M.G.
7th, Tony Pompeo, Cisitalia

Seventh lap: Logan Hill passed M. Collier on the north leg of the course in the curves, but Collier took the lead back with the better speed of the blown engine in the back stretch. He was never headed again and came in the race winner. Logan Hill was 2nd but was 750-1100 cc. class winner. A Zagato Fiat went out in the 8th lap with much rattling—rods, no doubt. About 30 cars started in this race, the usual hot and cold stock M.G.s plus Milliger's M.G. special, 2 Crosley Hot Shots (one blown), 3 Cisitalia Sport Coupes, 1 Zagato Fiat coupe, and 1 Mille Miglia Fiat coupe.

Second race: (ten laps, 40 miles):
A truly terrific collection of fast automobiles: 2 Ferraris, 1 sport, 1 competition; a Frazer-Nash competition; a B.M.W. Mille Miglia Coupe; 8 blown M.G.s; 2 Alfa Romeos; 2 Healeys, a roadster and a Silverstone; a Fitch Bitch (Fiat chassis, V-8 60 engine much modified and added to Crosley Hotshot body, making a rather attractive car with a probable future. The unit was just completed two days before the race and had hardly been road tested); and an Austin A-90, stock except for doors.

First lap: Collier, Ferrari; Kulock, Frazer-Nash; Kimberly, Ferrari sport. First lap time from a standing start was almost 74 mph. These men were really out for the lead!

Fourth lap was Collier, Kulock, and Kimberly with leaders now lapping steadily at 70 mph.

Fifth lap: Collier really going and opening up, as was Kulock over Kimberly in 3rd. There was about ¼ mile between these 3 cars. At this point it was evident that these 3 cars were far superior to the rest of the field and running away. Kimberly in 3rd position easily had a ½ mile lead on the 4th car.

Sixth lap: Kimberly closed on F-N a bit.

Seventh lap: Collier running slower due to well established lead.

Eighth lap: Kimberly made big bid and passed Kulock into 2nd position.

Ninth lap: Kulock given all-out signal by his pit and made a screeching all-out bid with his engine screaming in the gears to get his 2nd position back. Perry Fina in Nardi-Alfa 2500 comp. going good but out with cracked fuel line after moving up 5 positions in 3 laps. Pompeo steady with his Alfa 2500 cc. coupe, but car not at all right as cutting in and out. Turned out to be magneto trouble, and he borrowed Fina's mag to run in feature race as Fina hadn't qualified. Pompeo, incidentally, was running with a Ford rear-end installed only the night before by candle-light. These last minute ailments continue to increase as sports cars get hotter.

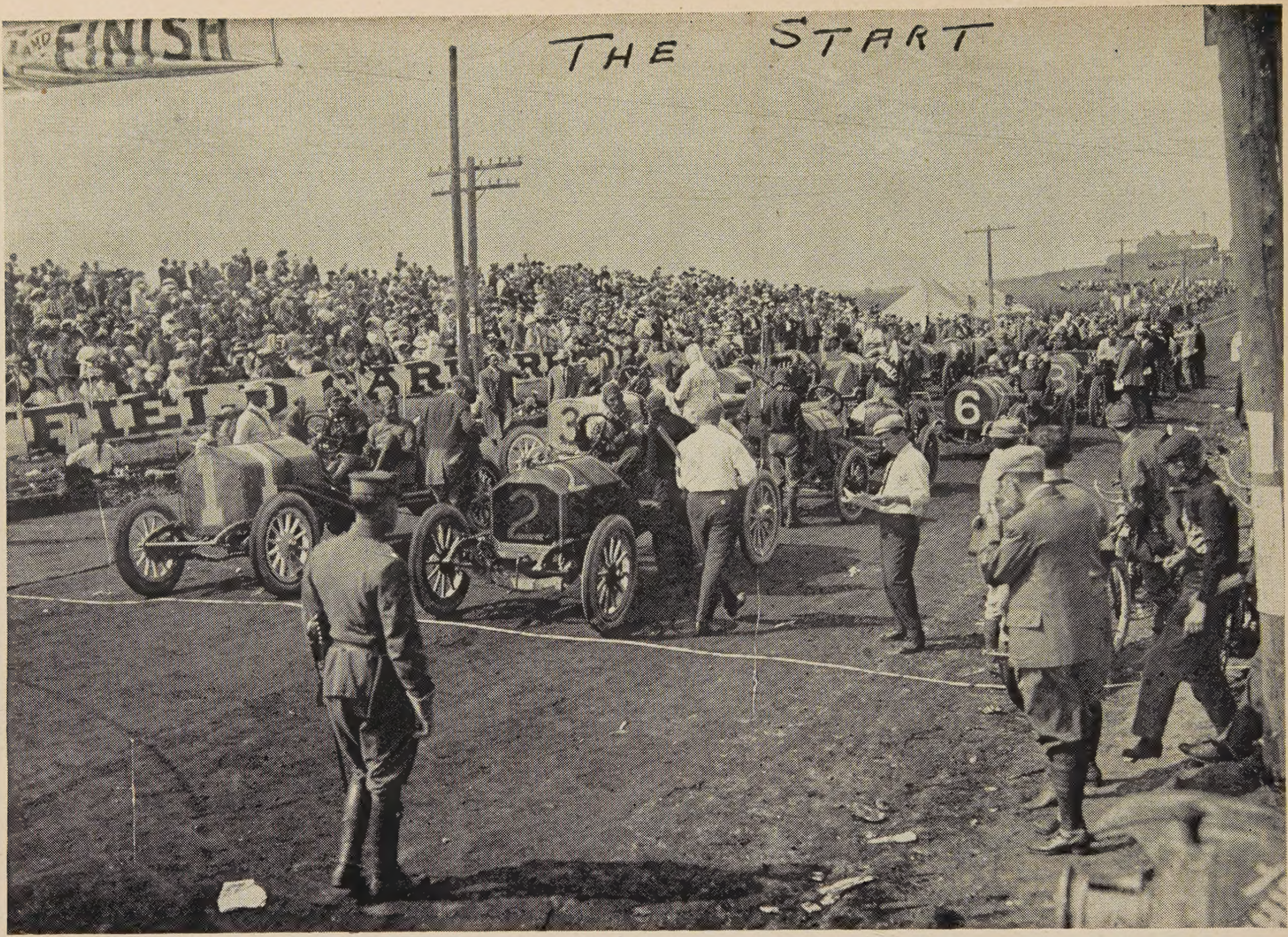
Third race (ten laps, 40 miles): Cars were quite a group of big engine iron, and the spectators weren't disappointed in tire squealing and engine noises along with flashing acceleration. Cole's Cadillac-Allard was so smooth and quiet that it appeared to be slower than many of the other cars until you noticed the lead he had built up and put a watch on him. There was one car that outdid the big cars in noise, tho, and that was Kulock's Frazer-Nash; it really had a vicious snarl!

Starters of interest were: two XK-120 Jaguars; one S.S. Jag., this owned by Dave Garraway

(Continued on page 29)

Sequence below shows TV star Dave Garraway as his SS-100 goes into slide and connects with snow fence. Stages might well be called ANXIETY — FEAR — DESPAIR — DISGUST. A spin during road race is much less dangerous than on speedway.

—PHOTOS BY STEVE LANSING



The start of one of the Elgin Road Races. Displacement limit was 600 cu. in. National Guardsmen were assigned for Police duty.

PHOTOS COURTESY ELGIN NATIONAL WATCH CO.

Once upon a time—America Had Road Racing

ELGIN ANNUAL ROAD RACE

RALPH MULFORD WINS ELGIN RACE! ASTOUNDS ALL WITH 62½ M.P.H. So read the Chicago headlines of August 1910, date of the first road races on the western outskirts of Elgin, Illinois. The course was of irregular shape, 8½ miles long with four corners, all left, one a turn of about 125°.

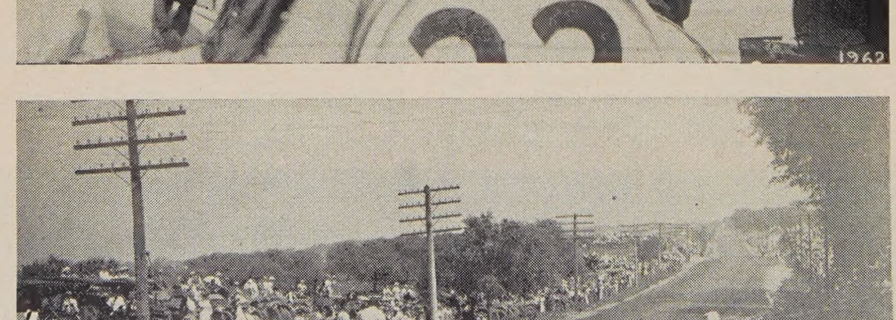
The race was run nine times over distances varying from 305 miles in 1910, to 203 miles in 1933, at which time a revival was attempted. Winning speeds increased from 62.5 mph in 1910, to 88.34 mph in 1933.

It took men of steel to drive those iron monsters around the rough course made rougher by a dirt surface road which was used for public travel to within 30 minutes of race time.

The various races were won by a Lozier, National, and a Ballot, three times by Mercedes (Ralph De Palma), twice by Stutz, and in 1933 by a Buick Special.

The Winner's Trophy, presented by the Elgin Watch Company, is of sterling silver, stands 50" high, and is engraved with winners' names, cars and speed. In recent years, it was more or less kicked around, even to being used for a softball league prize, but at last has been given an appropriate resting place—in collection of Mr. D. Cameron Peck.

Above, Ralph Mulford, left, and his mechanic, at the start of the 1911 Indianapolis "500." With this car, he won the 1910 Elgin Race.



Left, Dave Buck, roaring down the home straight in his Marmon.

INDIANAPOLIS ANALYSIS

by Gordon Schroeder

The Indianapolis 500 Mile Race, which has long been extolled a valuable "Proving Ground" for the automobile industry, has seemingly changed into a contest in which the skill and daring of the driver, and the individual skill of the mechanic seem to play the most important parts. Of the 66 entries, all but 13 were powered by Meyer-Drake built four cylinder engines. All but one of the 33 starters were fours, making this the first time in the history of the "500" that one type of engine has monopolized the field to the detriment of the race.

Admittedly the fastest and most powerful cars in America today, the V-8 engined Novi Specials were dogged by mechanical troubles and even tho they made individual lap times of as high as 138 mph (unofficially), they were unable to qualify. Duke Nalon's mount broke a supercharger drive shaft and Chet Miller's Novi was burning spark plugs.

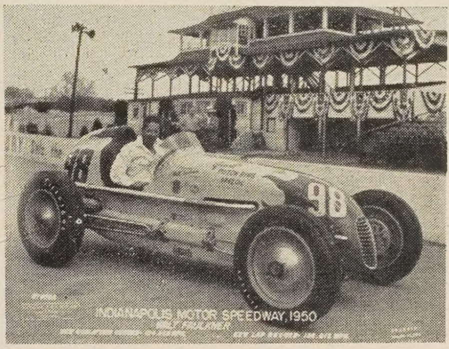
The sudden ending of the race played havoc with the AAA's much-bragged speedway timing system. False results were announced over the loudspeakers, another version was given the press, and official results were not available for many hours. One car owner threatened to sue.

Considering the monotony of entries and the general lack of interest, it might well be time for AAA and the Speedway to take stock and consider the future before there is none!

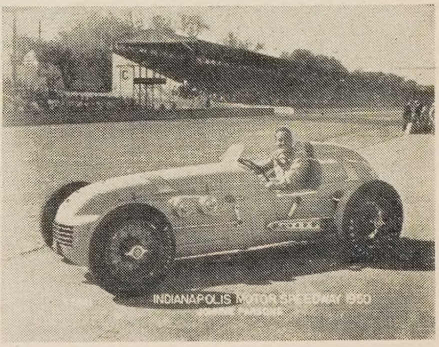
PIT STOPS AND CARS OUT OF RACE

Lap 5	Bayliss Levrett #24, oil trouble.
Lap 10	Jim Rathman #76, plug change 2 minutes.
	Duke Dinsmore #69, too much oil. Out of race.
Lap 12	Spider Webb #21, oil on goggles, 1 min., 10 sec.
Lap 17	Spider Webb #21, oil leak around gearshift lever.
Lap 23	Jim Rathman #76, carburetor trouble.
Lap 25	Dick Rathman #45, slid into infield in northeast turn. Out.
Lap 30	Walt Brown #4, fuel trouble.
Lap 34	Henry Banks #12, oil leak.
Lap 37	Tony Bettenhausen #14, wheel bearing out. Out of race.
Lap 38	Bayliss Levrett #24, oil leak.
Lap 40	Walt Ader #27, jumped out of gear, 1 min., 30 sec.
Lap 42	Sam Hanks #23, oil pump failure, all rods out. Out of race.
Lap 45	Jim Rathman #76, carburetor, spark plugs, refuel.
Lap 52	Jimmy Jackson #61, broken vibration dampener. Broken blower drive. Out of race.
Lap 52	Walt Ader #27, slid to apron, continued.
Lap 63	Fred Agabashian #28, tire change.
Lap 64	Fred Agabashian #28, stripped blower gears. Out of race.
Lap 73	Henry Banks #12, fuel, tire change, new driver Fred Agabashian.
Lap 76	Fred Agabashian #12, oil spraying driver.
Lap 77	Fred Agabashian #12, oil spraying driver.
Lap 78	Johnny McDowell #62, fuel, tire change, new driver Tony Bettenhausen.
Lap 84	Paul Russo #7, refuel, clean windshield.
Lap 84	Joie Chitwood #17, fuel, tire change.
Lap 88	Bill Schindler #67, spun on northeast turn, pit stop.
Lap 89	Jackie Holmes #77, spun on northeast turn, pit stop, tire change.
Lap 90	Jerry Hoyt #31, refuel.
	Spider Webb #21, refuel.
Lap 100	Gene Hartley, #75, refuel and tire change.
Lap 103	Walt Ader #27, refuel and tire change.
	Jack McGrath #49, refuel and tire change, 5 min. 55 sec.
Lap 105	Johnny Parsons #1, refuel and tire change, 1 min. 30 sec.
	Troy Ruttman #55, refuel.
Lap 106	Bayliss Levrett #24, refuel and tire change. New driver Bill Cantrell.
Lap 107	Bill Cantrell #24, stalled on backstretch. Out of race.
Lap 109	Mauri Rose #31, refuel and tire change. Fire.
Lap 110	Pat Flaherty #59, refuel and tire change.
	Bill Schindler #67, refuel and tire change.
Lap 111	Myron Fohr #2, refuel and tire change.
	Bill Schindler #67, universal joint trouble. Out of race.
Lap 113	Walt Faulkner #98, refuel and tire change.
Lap 115	Jerry Hoyt #81, refuel and plugs.
Lap 122	Bill Holland #3, refuel and tire change, 1 min. 5 sec.
Lap 127	George Connor #5, refuel and tire change.
Lap 138	Race called.

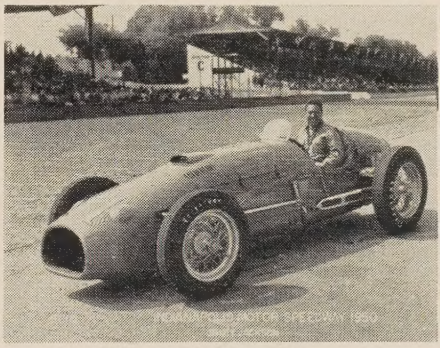
PHOTOS BY TOWER STUDIOS



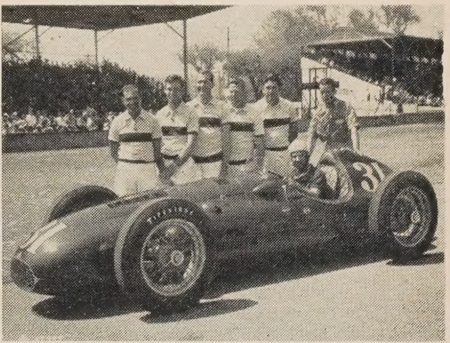
Walt Faulkner, driving "Aggie" Agajanian's rebuilt Kurtis-Kraft, surprised everyone by setting new track lap record of 136.013 mph. This feat would seem to indicate driving skill and courage as being greater factors than advanced chassis design.



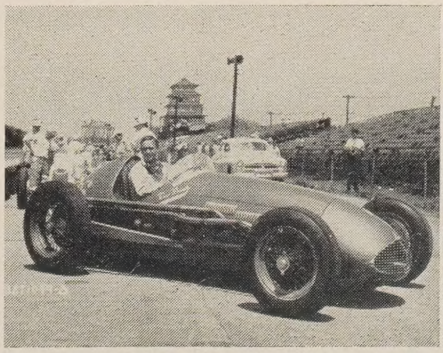
Johnnie Parsons, driving the Kurtis-Kraft Special, lead the way home to confound the supporters of superchargers and front-wheel drive. Appearing at the Speedway for the third time, the "Draw-bridge" seemed free of the bugs which have appeared in the past.



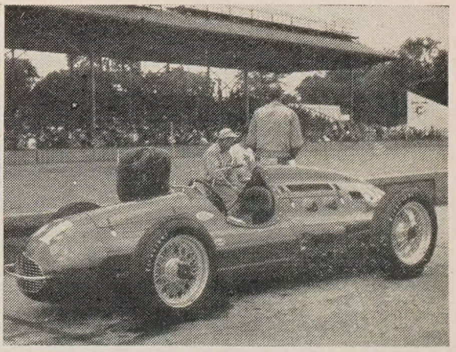
Jimmy Jackson, driving the six-cylinder Cummings Diesel (all other starters were 4-cylinder), was moving up rapidly when vibration dampener and blower drive broke. One of the five Kurtis Kraft series 3000 cars, single disc brake at rear was mounted inboard.



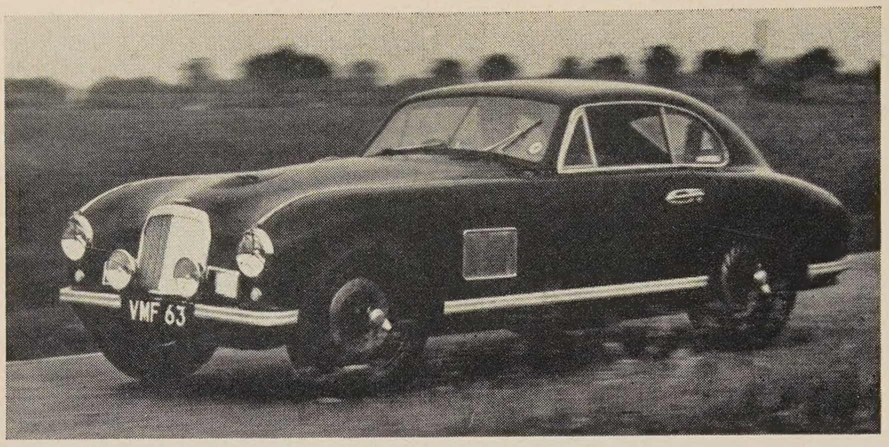
Mauri Rose, driving the Howard Keck car, held an early lead and finished third (in final shuffle, that is). A 270 cu. in. front-drive, this car was designed to permit easy conversion to rear engine, rear drive at some later date. The lowest car in the 1950 race.



George Fonder, driving the Ray Brady Spl. (built by Diedt & Schroeder), attempted to qualify but 6-cyl. Thorne-Sparks engine blew up. Runs after changes to 270 Meyer-Drake were not fast enough to make the race. Frame is light alloy.



Sam Hanks, driving the N. J. Rounds "Rocket," pitched engine apart in practice when crankshaft broke. This rear-engined car missed last year's race with teething troubles. Lack of unusual cars such as this are robbing the "500" of the mechanical interest it once had.



Aston Martin at Le Mans, 1950

For the 1950 Le Mans 24-hour Race only one British Manufacturer is entering a team of standard production cars—Aston Martin Ltd. They have a long history of racing achievements and since the war have consistently been in the top rank in Sports Car Events. After winning the 1948 Belgian 24-hour Race outright, and after outstanding successes last year in the same race and at Le Mans, Aston Martin Ltd. have an exceptionally strong team at Le Mans this year. Three 2½ litre "DB2" Sports Saloons will be driven by:

Reg. Parnell, the best known and the most successful British driver since the War. Parnell has had considerable Grand Prix experience, principally with Maserati Formula I cars. In the 1950 Grand Prix of Europe (at Silverstone, England) he took third place, being the first British driver home.

Charles Brackenbury has probably driven a much wider variety of cars than the other five, and was a regular driver at Brooklands from 1930 onwards. He should be quite at home on the Le Mans circuit where he has driven Aston Martin and Lagonda cars already.

In last year's Belgian 24-hours Race he took third place in a prototype of the Aston Martin "DB2's" which are being entered for the 1950 Le Mans. With Reg. Parnell in a "DB2", he will provide formidable opposition.

Lance Macklin, a comparative new-comer to racing, has only been at the wheel since the War. Nevertheless, he finished third in an Aston Martin last year in the 2-litre class at Spa. In the recent Coppa Inter Europa at Monza he drove his own Aston Martin "DB2" (2½-litre) and finished second in the 3-litre class.

George Abecassis, co-driver with Macklin—very experienced in pre-war and post-war events.

Jack Fairman and *Eric Thompson,* altho amongst the younger drivers, last year won jointly the 1½-litre class at both Le Mans and Spa.

Many of the biggest names in motor racing have been linked with the Aston Martin since its earliest days; Kensington-Moir and G. C. Stead shared their reputation with the Aston Martin cars in which they scored their greatest triumphs. Eighty-six point two miles in an hour would be good time even today for a 1½-litre car, yet this is what Kensington-Moir did in 1921 in his Aston. The early '20's saw another Aston Martin (baptised 'Bunny') break ten world records during a historic eighteen hours non-stop run—first light car to hold any world records.

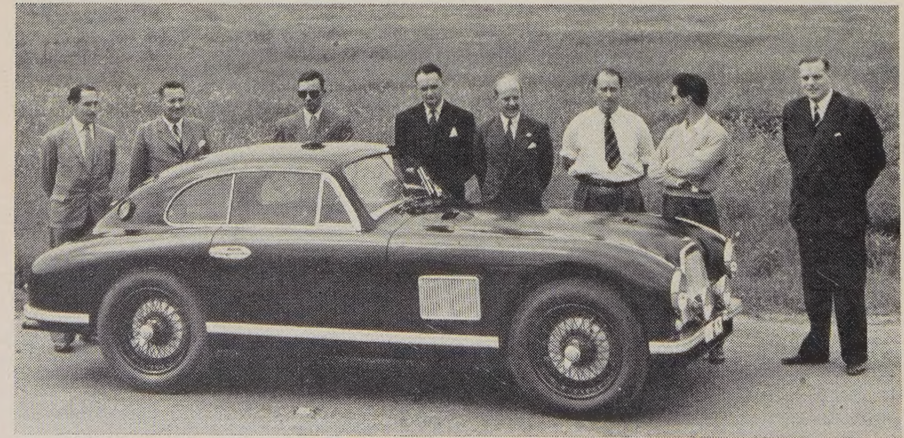
Also in 1922, G. C. Stead took second place, again a field of more powerful machines, in the classic 200 miles race at Brooklands.

At Le Mans in 1932, Bertelli and Driscoll brought home the coveted Biennial Cup; since that date, Aston Martins have always been a force to reckon with at Le Mans 24 hour races in France.

Since the 1930's, Aston Martins have concentrated on developing a super 2-litre model, and the first post-war Astons were of this capacity. Those who thought the marque extinct had a sharp reminder when, in 1948, a new 2-litre Aston Martin won the Belgian Spa 24-hours Sports Car Race. Driven by co-drivers Leslie Johnson and St. John Horsfall, this car not only won the 2-litre class—it beat the whole field, irrespective of class, and incidentally earned Horsfall the E.R.A. cup for 1948.

LE MANS

Standing beside one of the DB2 Aston Martins to be entered in the 1950 Le Mans 24-hours Race are: (l. to r.) Jack Fairman, Jack Stirling, technical director, George Abecassis, John Wyer, competition manager, Eric Thompson, Charles Brackenbury, Lance Macklin, and James Watt, asst. genl. mgr.



American Entries At Le Mans . . .

By Alec Ulmann

Contrary to popular opinion, the U. S. have been represented at Le Mans in many a year. Our efforts reached a crescendo in 1928, when a Stutz entered by Robert Bloch and Edward Brisson came in second, a Chrysler driven by Stoffel and Rossignol third, and another Chrysler fourth. The Stutz was beaten to the finish line by no one else but the great Woolf Barnato in his legendary Bentley.

Most other American attempts at Le Mans were unsuccessful. In 1925, a Chrysler ran 117 laps instead of the 119 and was disqualified. In 1926, a Willis Knight and an Overland failed to finish. In 1929, a Willis Knight and an Overland failed to finish. In 1929, after the victories of '28, Stutz (Louis Chivon and Edward Brisson) came in fourth and two Chryslers came in sixth and seventh. This was the last year an American-made car placed at Le Mans, tho there were several entries up to 1933.

Charles Moran and Alfred Miranda ran a duPont in 1929 and went out on the 20th lap because their battery fell out.* They were in 8th position and doing well. In 1931, a Stutz, a Chrysler Imperial and an ordinary Chrysler were entered—all went out of the race before the 15th lap. The lone American entry in 1932, the Stutz of Edward Brisson, could not get beyond the 19th lap. In 1933, Prince Nicolas of Rumania was unable to make the required mileage on one filling in his gargantuan (6.882 litre) Duesenberg, "J" He tried again in 1935, the year of the last U.S. entry, failing on lap 38.

In 1939, Miles Collier of Florida, winner of the Watkins Glen Grand Prix in 1949, entered a diminutive 847 cc blown M.G., the very same car that did so nicely in 1949 at Bridgehampton (driven by Steve Lansing). Being a British car, the entry was listed as such rather than American. Apparently, trouble set in on the 40th lap forcing the M.G. out of the race.

This year's attempt, which will bring the Stars and Stripes back to the starting line, is a most commendable effort of our friend and that great sportsman, Briggs Cunningham. The team of two Cadillac cars will consist of Briggs and Phil Walters driving an open aerodynamic car and Miles and Sam Collier driving the standard two-door Cadillac sedan. Other members of the team are John Olivean, Frick, Hemp Oliver, and yours truly.

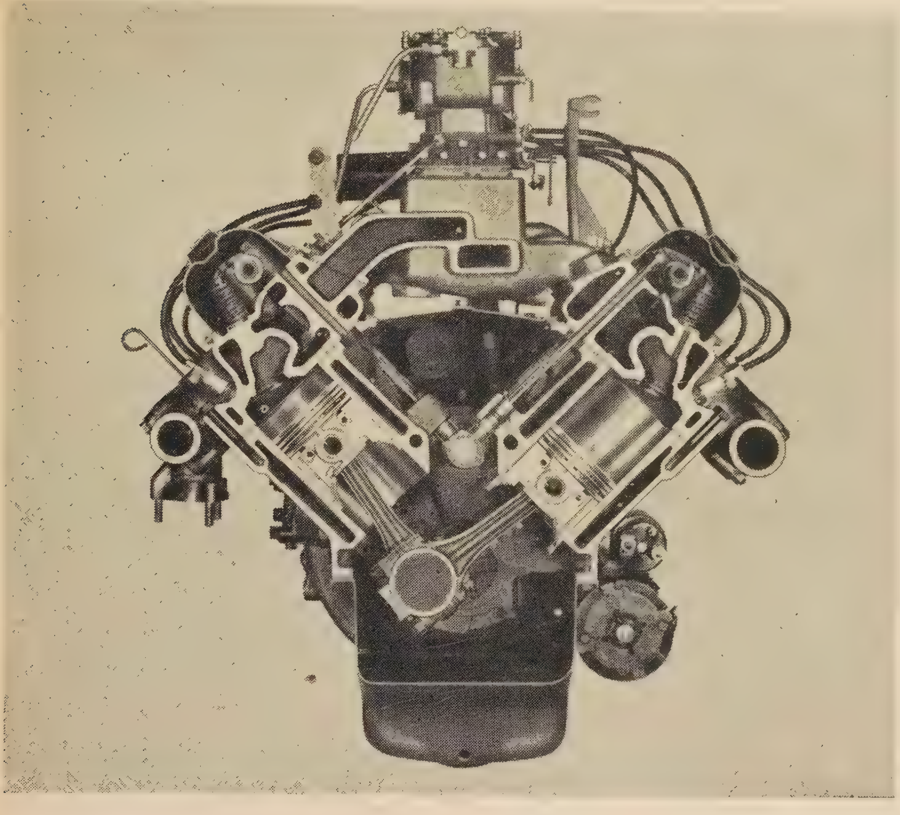
The special coach work which has been designed with all latest wrinkles of aerodynamics by Grumman Aircraft engineers, will be a two-seater super-streamlined light alloy assembly. The standard sedan is of current production type with addition of larger tank to allow 250 miles between refueling. Brakes have been reworked by adding aluminum fins, that are bonded to the brake drums by the Fairchild Alfin process, for additional cooling area. The cars will use 3-speed manual gear shift and the highest gear ratios available from the factory. Special manifolding has been designed for multiple carburetion and additional shock absorbers have been installed.

Unless unforeseen and tragic delays occur, you can look forward to seeing the S.C.C.A. emblem and the Stars and Stripes floating in the June breeze at Le Mans this year!!

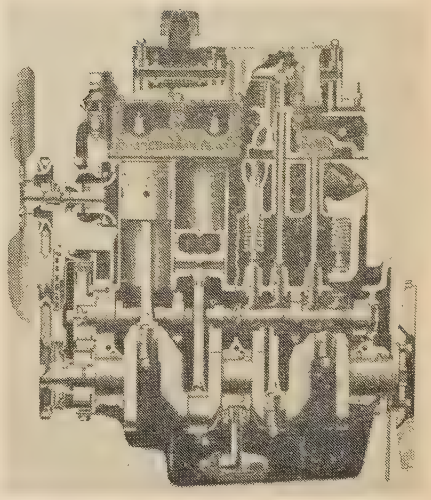
See letter from George A. Barker on page 2 for different version.—Ed.

Rockets and Hurricanes

by JOHN R. BOND



Cross-section of Oldsmobile "Rocket" engine, at left, shows short stroke and compact design. Note quench area.



Longitudinal cross-section of new Willys "Hurricane" engine reveals long stroke and F-head valve arrangement.

Oldsmobile has been in production on their *"Rocket"* engine for over a year, and now comes Willys with their *"Hurricane"* F-head engine. The two engines, so different in size, also present an interesting contrast in other ways. The basic engineering problem in both cases was to improve car performance thru better and more efficient utilization of available fuels. Before outlining the methods employed by each company to reach similar objectives it would be well to briefly compare the engines.

	Hurricane	*Rocket*
Number Cylinders	4	8
Cyl. Head Type	"F"	OHV
Bore	3.125	3.750
Stroke	4.375	3.437
Disp.-cu.in.	134.2	303.7
Disp.-cc.	2200	4978
Advertised BHP	72 @ 4000	135 @ 3600
Adv. Torque	114 @ 2000	263 @ 1800
Comp. Ratio	7.40	7.25
Stroke/Bore	1.40	.92
hp/cu.in./1000 rpm	.1357	.1235
Approx. Weight-lbs.	430	671
Pounds/BHP	5.97	4.97

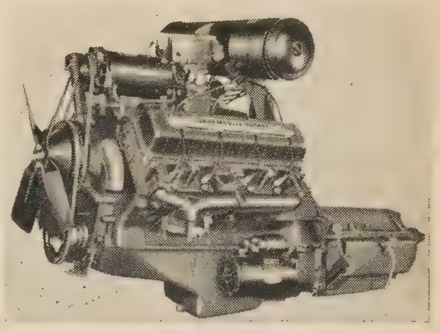
From this comparison, the BHP/cu.in./1000 rpm is especially interesting in that it shows that the specific output of the Willys is better than the Oldsmobile.

The *Rocket* engine is completely new, replacing the straight 8 originally introduced in 1932 and redesigned in 1937. This engine shows the benefits derived from a progressive management policy which does not handicap engineering, and the basic design should not require any appreciable tooling changes for the usual life span of approximately 7 years.

In contrast, the *Hurricane* is merely a modification of the basic engine first produced in 1925 as the Willys-Overland "Whippet". This 25-year-old design still employs the original bore and stroke, connecting rod length, bore centers, etc. Minor, but worthwhile, changes have been made thru the intervening years including the addition of integral counterweights to the crankshaft, adoption of insert type bearings, aluminum pistons, and downdraft carburetion. This "European-type," small-bore, long-stroke engine, (as advertised in 1925) has been obsolete for 20 years, and the siamesed cylinder bores, crowded valve ports, and extremely long connecting rods are not condusive to either stamina, nor long life. Knowing all the foregoing, one writer nevertheless had this to say of the 1950 *Hurricane* F-head conversion: "The solution is a brilliant one".

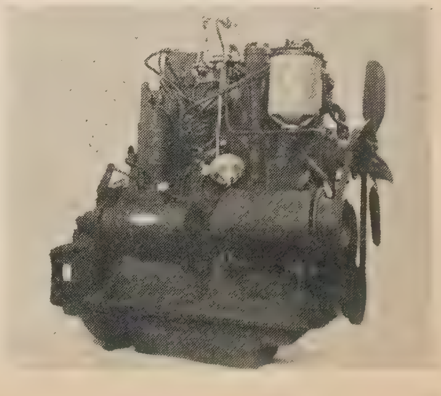
The Willys approach to the better utilization of available fuels required consideration of the necessity to continue manufacture of the L-head four-cylinder engine for Government contracts, so the adaption of overhead inlet valves for certain other models is merely doing what Riley and Roof both did for the model A Ford over 20 years ago. Substituting an overhead inlet valve of 2.00" diameter in place of the normal side valve of 1.53" diameter results in a combustion chamber form long advocated as ideal by the outstanding authorities on chamber design, Taub and Janeway in the USA, and Ricardo and Whatmough in England. Incidentally, this combustion

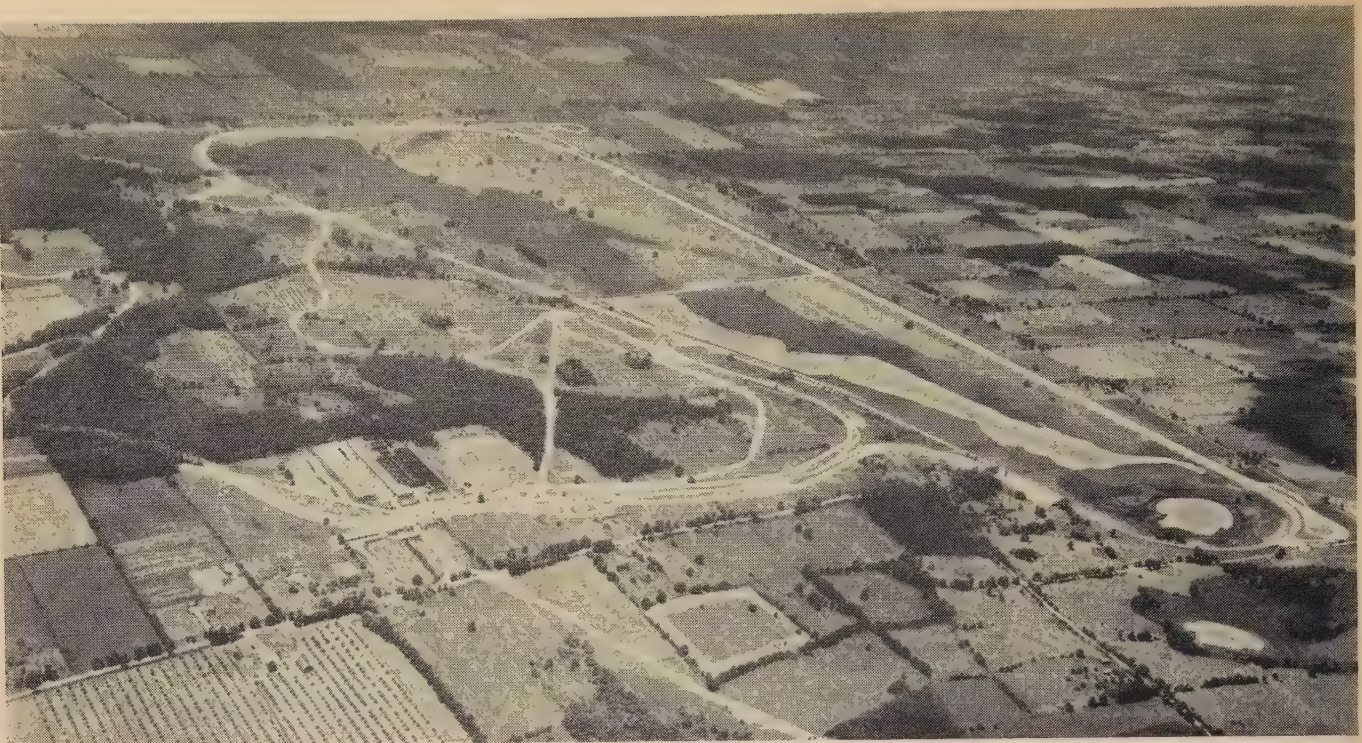
(Continued on page 26)



Accessory arrangement on Olds "Rocket" is very similar to layout used on Ford V-8.

The Willys "Hurricane" carries accessories high on the right-hand side of block.





A straightaway strip of 1.36 miles parallels the short straight of G.M.'s 3.8-mile test track while another runs along the long upper stretch. At lower left are 20 miles of roads.

PROVING GROUND SPEEDWAYS

POSSIBILITY OF INTERNATIONAL SPEED RECORD ATTEMPTS & GRAND PRIX ROAD RACING

Over 200 mph on the straightaways and lap speeds of over 175 mph!

Such would be the performance of Indianapolis-type cars were a race to be held on Packard's 2½-mile concrete test track. On June 14th, 1928, Leon Duray drove a 1½ litre front-drive Miller around the oval at an average of 148.167 mph for the lap. The purpose was to find the top speed of the new track, but instead the limit of the Duray's car was found. The maximum radii banked turns make the Packard Speedway much faster than the four-cornered Indianapolis course.

Speaking of corners, the General Motors Proving Ground has a three-turn 3.8 mile concrete-surfaced "four-lane high speed loop". With two long straights and well banked turns, this speedway would be similar to Indianapolis but faster.

Altho many of the record attempts in Europe are conducted on select sections of Autobahn-type super-highways, the longer time or distance runs are usually based on the Montlhery speedway in France or the Monza circuit in Italy.

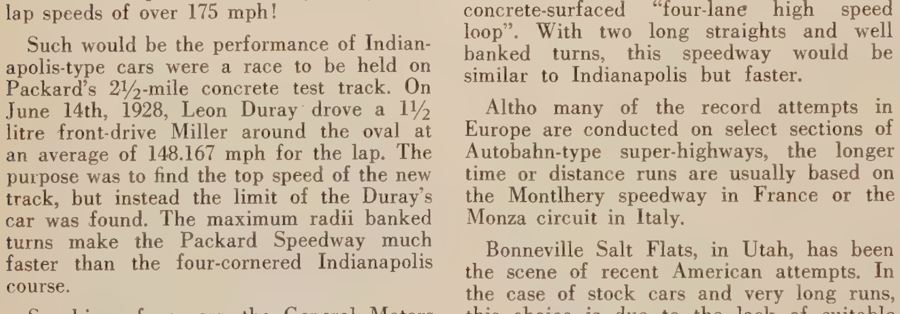
Bonneville Salt Flats, in Utah, has been the scene of recent American attempts. In the case of stock cars and very long runs, this choice is due to the lack of suitable speedway, for the salt flats have many disadvantages in this type of undertaking. Constant surveillance, service facilities, control of track surface, lighting, and proximity to a city are all in favor of a speedway. Availability, regardless of season, is another important factor.

Alan Hess writes vividly of the many deficiences and difficulties of using Indianapolis Speedway for record work in his book, *"The Indianapolis Records"*. The famous Atlantic City 1½-mile board track, scene of numerous record runs, was lapped by Frank Lockhart in a 1½ litre Miller at 147.7 mph, a speed which compares very favorably with Leon Duray's 148.2 mph in the Miller at Packard. We might safely assume, therefore, that the Austin A-90 records would have been at least 10 mph faster had they been run on a comparable track. American manufacturers wishing to make new attempts would be faced with the same disadvantage—perhaps a major reason why the last American record (by an American car) was set in 1939—could be.

Why, then, couldn't the Packard or G.M. speedway be sanctioned by the AAA for this purpose. Surely the great industrial pride and national patriotism (on which they spend millions in advertising to convince us of) would lead these two firms to offer their facilities. The resulting improvement of conditions and reduction of cost might lead to American-held International Records as well as more presentable American Stock Car and Class records.

It does not seem likely that the Indianapolis Speedway—A.A.A. clique will adapt any

(Continued on page 28)

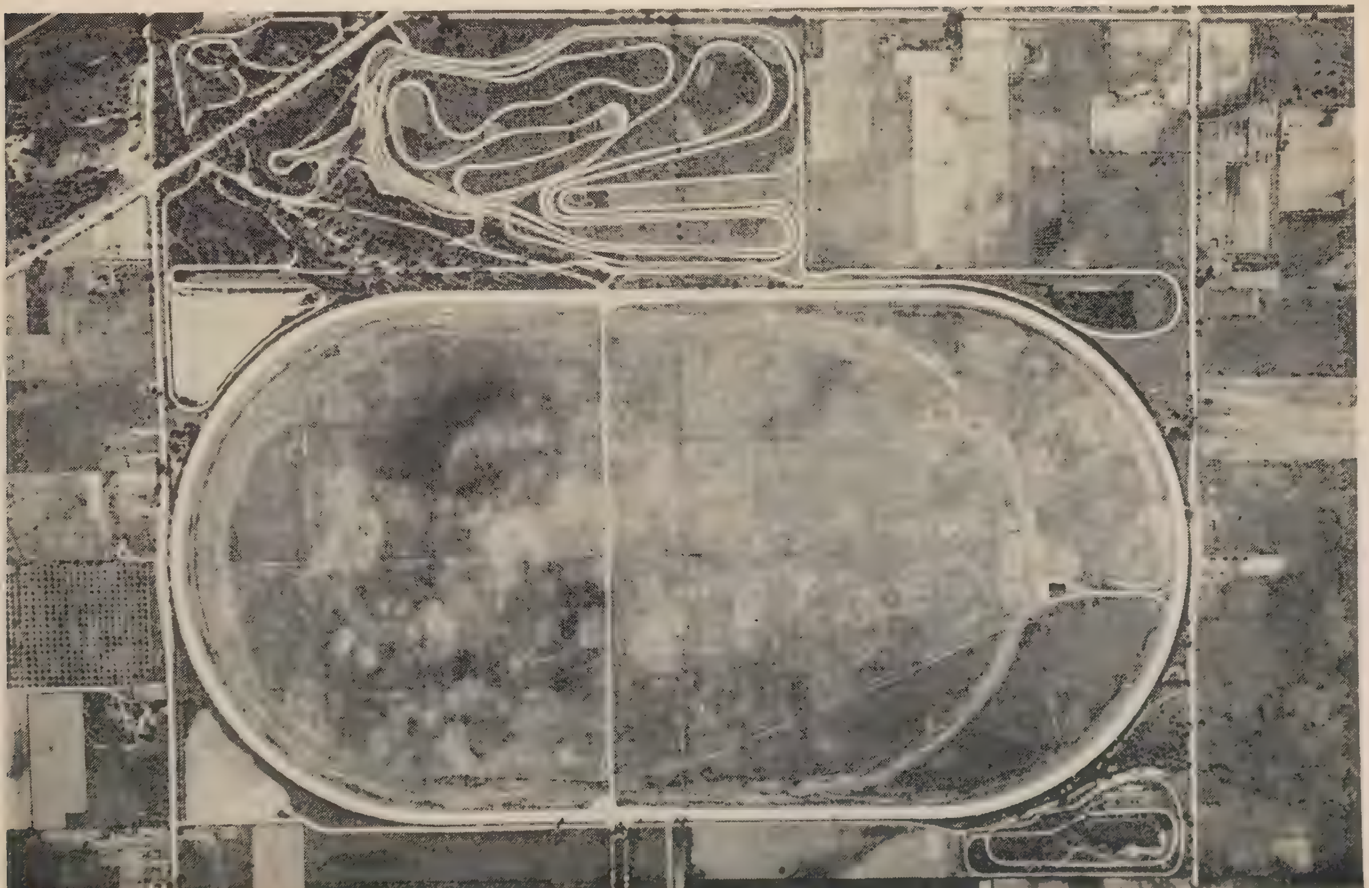


Gus Bell, G.M. test driver, and Bill Rader, of Cadillac, at speed while establishing a record of 95.3 mph for 1,000 miles in a LaSalle roadster on the G.M. track in 1927.

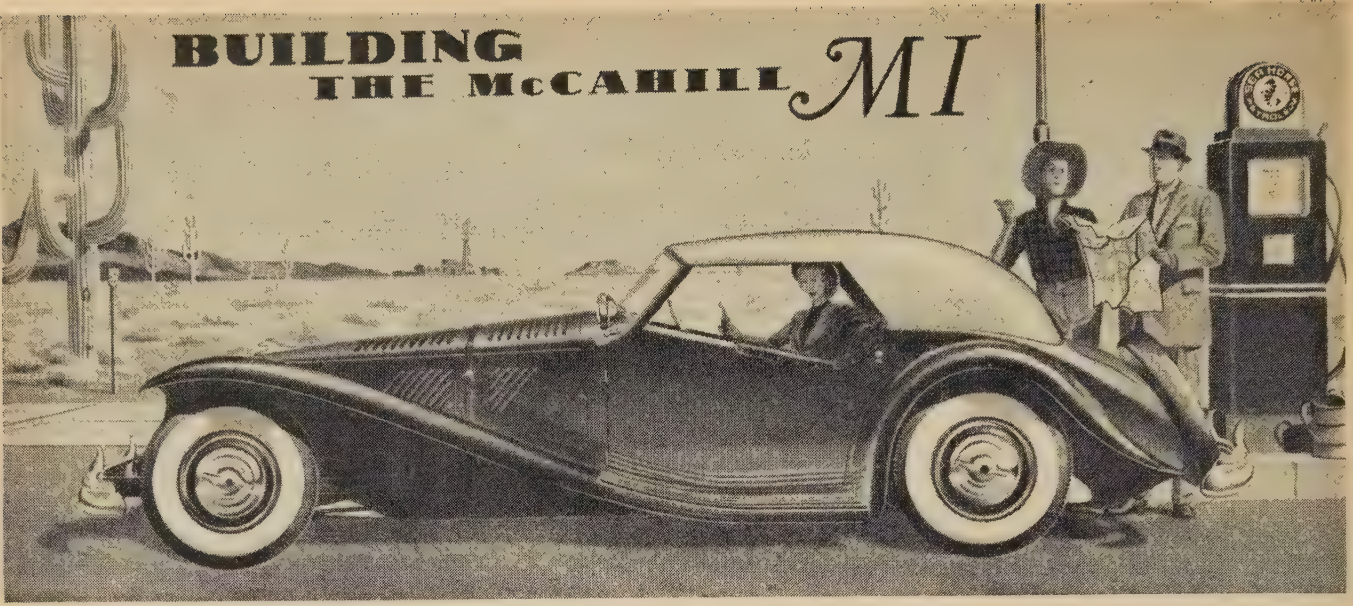
Leon Duray, driving a 90 cubic inch Miller, was clocked at 148.167 mph for the lap at the Packard Proving Grounds track on June 14, 1928. That same year, Duray set a first lap record at Indianapolis of 113.279 mph in this car, a difference of 34.888 mph. Using this superiority factor (30.9%) a modern speedway car would lap the Packard track at 178.041 mph.

A 1950 Packard Super 8 rides high on the banking of the Packard track. The 22-year-old concrete is in almost perfect condition. A perfect location for record attempts.

An aerial photo of the Packard Proving Grounds, taken at about 1,100 feet, clearly shows the full radii turns of the banked 2½ mile concrete test track. At the top one may see the 18 miles of test roads having a wide variety of surfaces, an ideal layout for all types of road racing, speedway events, or combinations such as were once run at Brooklands.



BUILDING THE McCAHILL *MI*



—MECHANIX ILLUSTRATED SKETCH

By JOHN BOND

Technical Editor

Over a year ago, Tom McCahill, popular automotive editor of *Mechanix Illustrated* magazine described his "dream car." The car, while not by any means a sports car, had so many thoroughly practical features that Road and Track felt that, with a few tips, it could actually be constructed by a good mechanic at a very reasonable cost.

A brief outline of the McCahill MI car, as visualized by Tom, follows:

Wheelbase	118 inches
Tires	6.50-15
Weight	2500 pounds
Speed	105 mph, cruise at 90
Engine	100 BHP V-8 coil-magneto dual ignition Winfield carburetor spark & mixture control on steering wheel free-wheel fan drive extra cooling radiator
Suspension	4 semi-elliptic springs torsion bar stabilizers 2-way hydro shocks Rudge wire wheels
Styling	open 4-seater clam shell fenders canvas covered alloy top seats fold back for bed outside spare accessible engine
Misc.	7½" ground clearance direct steering

The first step in building a replica of the McCahill MI is obviously the selection of a suitable stock chassis. Let's face it, this is no time to be proud and a tour of junk yards is definitely in order. There are a number of makes and models of older date which will serve quite well. Try to select a chassis with a wheelbase of 118", if possible. Longer chassis can readily be shortened, but tend to be heavy since they were designed for a larger power plant and body than is contemplated here. Look the frame over carefully—the side rails must be very low and wide enough to give a car you "step down into."

Study the suspension layout carefully, especially for strength of spring hangers, shock mountings, etc. If at all possible, choose the type of front suspension having the springs shackled at the front, as this gives nearly perfect steering geometry—shackled at the rear causes wheel-fight on rough roads.

Availability of spare parts is a factor to be considered and, in the writer's opinion, this usually rules out using the rear axle from too old a car. This also brings in the question of gear ratio—many older axles must be discarded because the gear ratios available will not permit 90 mph crusing unless an overdrive is to be used, of which more later. I recommend purchasing only the frame, springs, and shocks.

If you use the original front axle assembly from the chassis of your choice, be sure it has the same type of brakes as you select for the rear axle in order to syncronize properly.

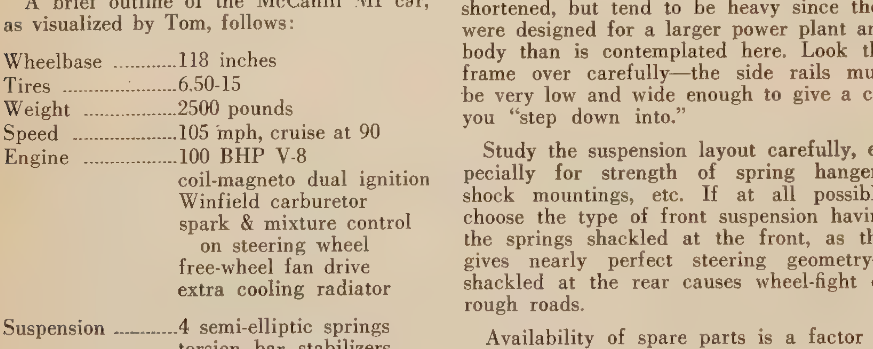
One of the best rear axles is the Ford, especially since 1935, as the center section is unchanged thru 1948, and a wide choice of ratios is available. While not the lightest, it is very rugged, and can easily be converted to an open drive shaft with 1942 "Commercial" Ford parts.

A 1949-50 Ford rear end with servo brakes is also very suitable, and much lighter than the earlier style axle. Remember, the trend is narrower, 56", instead of 58" on the 1935-40 models or 60" from 1941 thru 1948. With 1949-50 rear brakes, the front axle must carry similar brakes, or the rear ones will be doing all the work instead of about 50 percent.

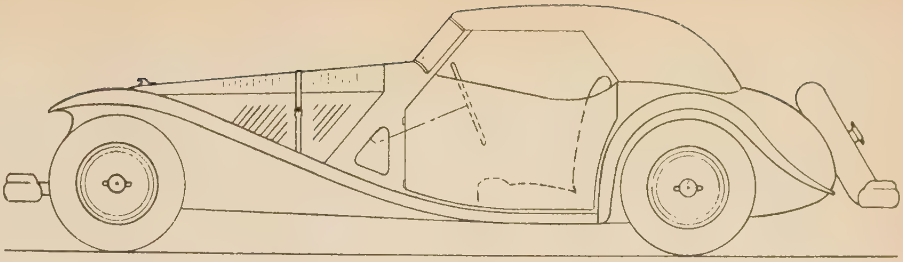
A 1949 "Commercial" Ford front axle is one possibility but it has 11" drums and servo brakes so 1949-50 Mercury or Ford Commercial 11" rear drums should be used instead of the 10" Ford passenger car drums. If a 60" rear tread is desired, the 1949-50 Ford station wagon and the 1949-50 Mercury both use the same 60" tread rear end which is somewhat heavier than the stock '49-50 Ford unit. Spring seats on any of these axles can be relocated to suit the frame selected.

Another arrangement would be a Chevrolet hypoid rear end (any year from 1937 to 1950) together with a 1937 or 1938 front axle assembly of the same make. This will give good brakes all around but the torque tube will have to be retained and is more difficult to shorten than the simpler and lighter open drive shaft.

For many obvious reasons a nearly stock 100 hp Ford-Mercury V-8 engine is to be used. The drawings show the location of the engine relative to the front axle which, incidentally, is 2" further back than the 1932 Ford V-8 and 18" further back than the 1949-50 model. Many engine modifications are possible, of course, but this article



"My car will have the real beauty of functional lines, with no falsies or hoopskirts. It would be built for the male of the species—and, frankly, to hell with his wife." Thus Tom McCahill describes his dream car, the McCahill MI. —MECHANIX ILLUSTRATED SKETCH



A scale drawing of the McCahill reveals several impractical features such as undersized radiator, cowl too high, poor steering wheel location, and rear seat located over the differential.

will confine itself to the original specifications.

Since Winfield doesn't make a replacement carburetor for the Ford V-8 we may as well forget this item, and leave it stock. But, for ignition requirements there is a solution. While not simple, it is possible to use the pre-49 style block having the distributor direct driven off the camshaft and still retain the 1949 distributor drive gear parts, to drive a Scintilla Vertex magneto. Manual spark control can be arranged as Tom wants it, but no manual distributor, even with Mc Cahill at the controls, can come close to doing the job as efficiently as the conventional full automatic system.

McCahill favors a "free-wheeling fan" as once used on the Wills St. Clair and Cadillac. Such a fan drive, now available at all Ford dealers, is a product of the Eaton Manufacturing Co., and is much superior to the two older designs in several ways. It is of the thermostatically controlled eddy-current type, which is an electric analogy to the hydraulic fluid drive. The use of this unit it highly recommended as it also eliminates the need of an extra cooling radiator which Tom originally specified for extreme heat conditions.

As a matter of fact, if any extra cooling is required it should certainly take the form of an oil radiator as used around 1932 on certain models of Hupmobile, Packard, Buick, Nash, and Olds. An oil radiator, more than almost any other accessory, will insure 90 mph cruising under any U. S. temperature without "burning up" the engine.

Stock Ford clutch and transmission are more or less mandatory, but a good 4-speed close-ratio gearbox would be ideal, though very expensive to incorporate. A good compromise is to follow the lead of the hot rod builders and use 1940 or 1942 Lincoln gears in the Ford transmission. The Lincoln gears give much higher ratios in first and second, with resultant higher speeds, practical because of the low weight of the MI. In any case, do not use the extra low ratios used in 1941 thru 1948 Ford-Mercury transmissions.

As hinted eariler, a cruising speed of 90 mph will take a little careful calculation. To begin with, it has been pretty well established and agreed that a safe limit on engine cruising speed is not rpm, but piston speed, Twenty-five hundred feet per minute is the usual figure taken as a safe maximum though the addition of an oil radiator should raise this figure a little. The 3.750" stroke Ford V-8 engine turns exactly 4,000 rpm at a piston speed of 2500 ft/min., and a 6.50-15 tire turns 750 revs/mile or 1125 rpm at 90 mph. Thus, desired engine cruise rpm divided by wheel revolutions at desired cruise speed = 4000 ÷ 1125 = 3.555, which is the axle ratio necessary. Since a Ford rear axle ratio of 3.54 is available, it is possible to use this ratio, without employing either a Columbia 2-speed axle or a '49-50 Ford transmission with Warner overdrive, in order to get the desired cruising speed. If you insist on the added complication, cost, and weight of an overdrive, by all means use 4.55 to 1 gears in the axle so that the overall or effective ratio in overdrive is not so high that acceleration and top speed is sacrified. Note that even the 4.55 axle with 0.71 overdrive ratio gives an overall ratio of 3.23 which is turning the engine *too* slow for decent acceleration and for ultimate potential maximum speed.

We now come to the biggest and toughest problem—body and fenders. An economical solution to this problem will involve some compromise or else depend on your luck with the local junk-yard. One of the closest approaches to this styling can be achieved by reworking the 1936 Ford 5-passenger convertible coupe body. This body is often found on California "customized" or reworked cars.

The first operation is that of "channeling", which involves cutting out the underbody or floor along the frame line so that the body is dropped several inches. The windshield slope can be increased without too much work, and even a curved glass substituted if desired. Discarding the windows and their winding mechanism will save reworking them to fit the new slope of the windshield and will permit cutting down the doors to add foreign sports car flavor. This operation will also save some weight and eliminate a common source of rattles.

Another solution to the body problem is to rework a roadster body by cutting away part of the rear deck to make room for two occasional seats. A "Carson" type top is very neat and easier to make than a canvas covered metal top. This famous padded top is made by reworking the top bows into a lower and smoother contour, adding reinforcements and welding the whole framework into a unit structure. Contours are rounded with chicken wire, padding, and fiber board before covering. The lower rear edges of the top are retained by snaps instead of being tacked, so that the complete assembly is quickly removable and can be left at home.

As an alternative, it is possible to utilize the complete metal roof from a "hard-top" coupe to make a removable unit. Sections or strips can be discarded and the edges welded back together to get the desired overall dimensions—the canvas cover will make ultra-neat welds unnecessary.

Clam shell fenders are probably impossible to find, but a close approach is the 1932 Ford fenders, front and rear. The '32 Ford fenders are shown on the illustration but even 1930-31 Ford fenders aren't too bad nor are they very different from the '32.

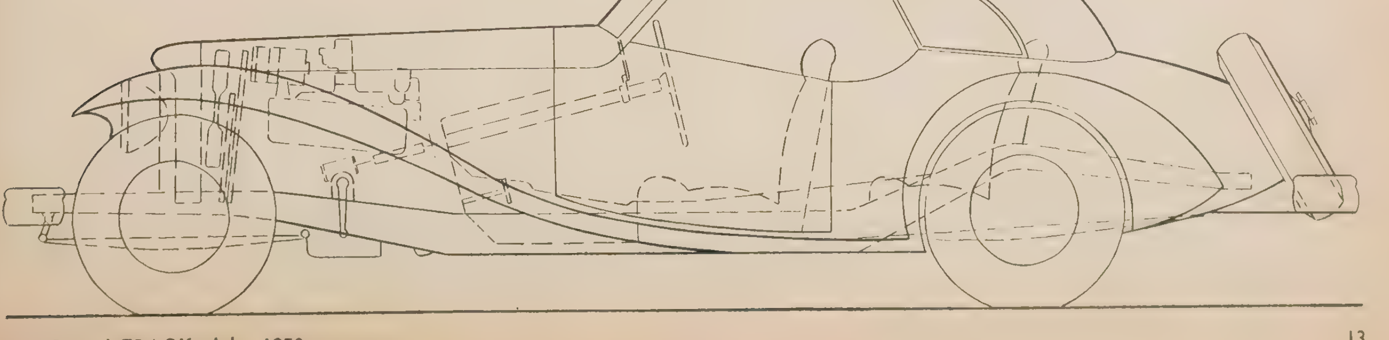
Radiator grill will depend on the preferences of the builder. I personally think the McCahill MI grill is too low and too narrow, both from an appearance standpoint and from a practical standpoint (for good cooling).

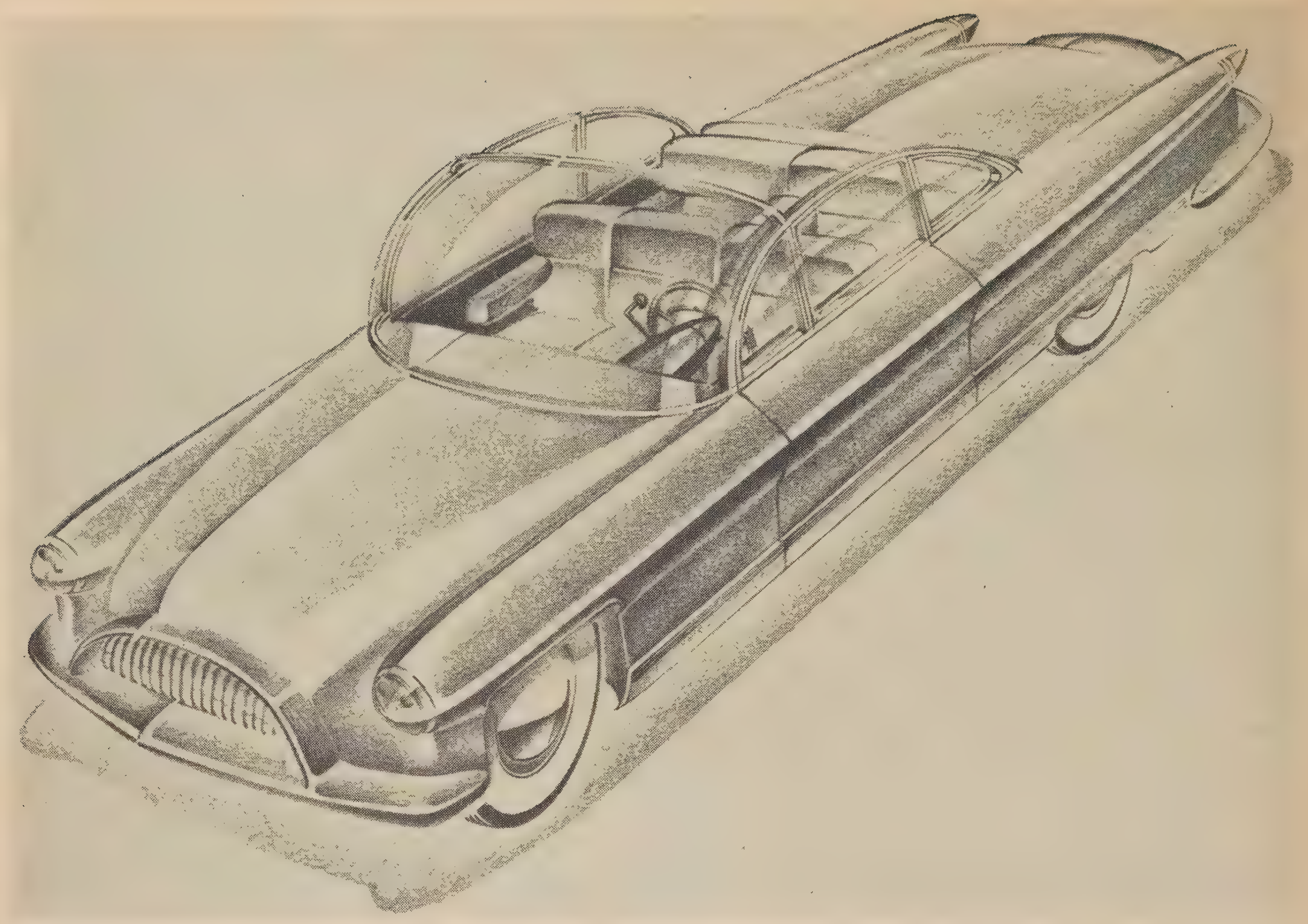
In closing, the writer definitely disapproves of using large high-torque engines. If you want very high performance, their very considerable weight and inability to withstand high rpm more than offsets the higher horsepower. With the increased engine weight, and adding the essential heavier clutch, transmission, and rear end, the net result is still not nearly as good as produced by a modified Ford-Mercury or Chevrolet engine. Since speed equipment is available for these two engines, and not for the large engines, they can easily develop well over 150 BHP with several hundred pounds less weight.

If you want the very best and latest, and can afford it, look over the new OHV Cadillac V-8 engine (which has a much better power to weight ratio than the Oldsmobile Rocket but still weighs approximately 200 pounds more than a Ford or Mercury installation).

Thanks to Mechanix Illustrated *magazine for permission to use copyrighted material appearing in Tom McCahill's article "The McCahill MI" which appeared in the January 1949 issue of* Mechanix Illustrated.

The McCahill MI, as revised by technical editor John Bond. Appearance is only slightly altered.





DESIGN FORUM

Design Forum was created as a showcase for the work of rising young stylists. Here the dreams of an idealist may be subjected to the criticism of the enthusiast.

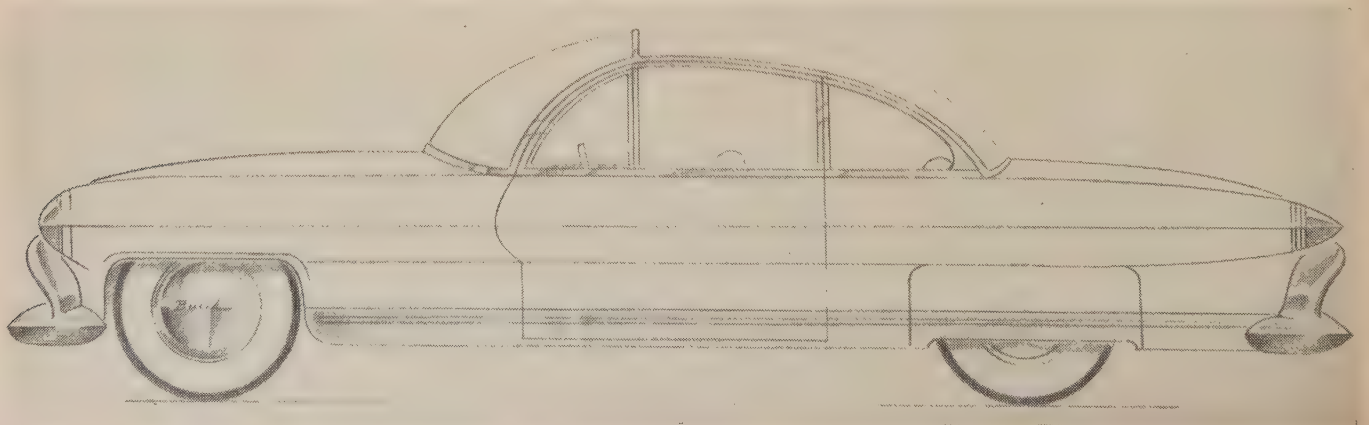
To encourage participation, Road and Track *is offering a monthly prize of $10 for the styling sketch chosen for* Design Forum. *Drawings in ink or clean, sharp pencil are preferred and should be accompanied by a brief description. Material submitted will not be returned unless accompanied by postage. Send to* Road and Track, *Box 409, North Hollywood, California.*

CONVERTIBLE COUPE

By Jim Yamamoto

A group of grille designs by this young ex-G.I. appeared in the December 1949 issue of Road and Track. One type, in particular, appealed to our readers so Jim has carried the theme to completion. At the front, a bumper guard forms an arch to protect the grille while a similar arrangement at the rear prevents damage to the tail light and license-plate assembly.

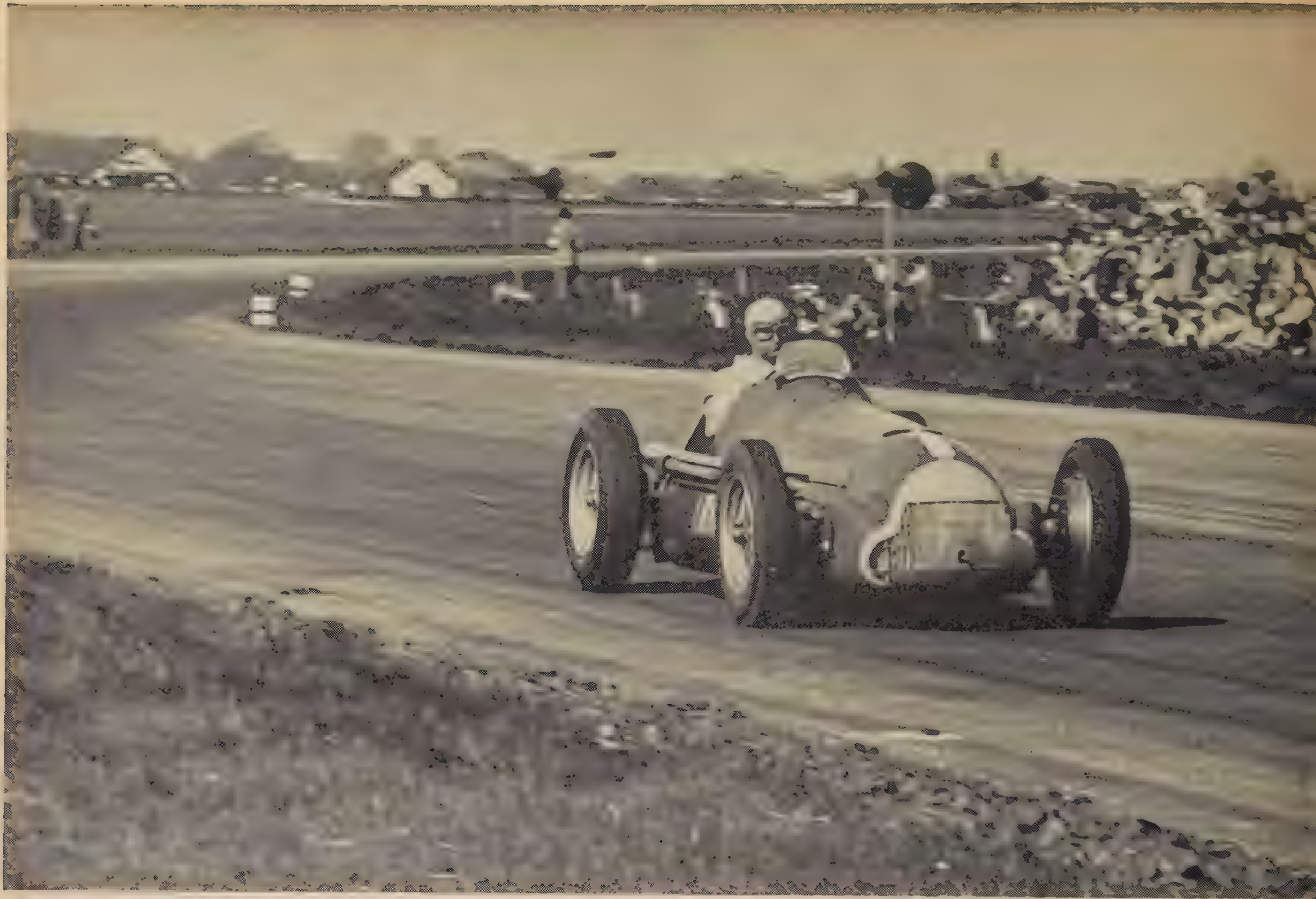
An appearance of length and lowness is achieved by carrying a pronounced mould line bulge from the head lamp to the tail light. This touch would probably inspire the advertising department to call this model the "Super-hyper-sonic Space Rocket." A compound curved windshield improves streamlining and a sloping hood gives an improved view of the road. Stationary side-sills provide rigidity and safety. Each of the three front seats is individually adjustable. Altho designed for a Buick chassis, the general lines could apply to any car of that size.

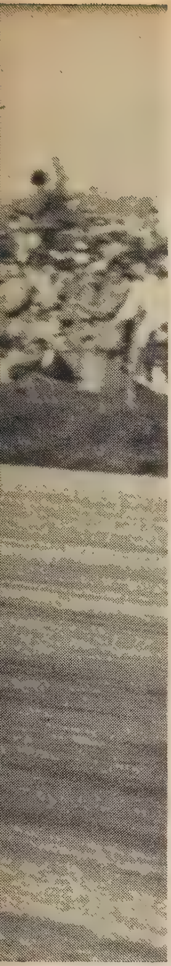


The Rolls Royce "Silver Dawn" features fittings such as small writing desks with typewriters and sliding seats for napping.

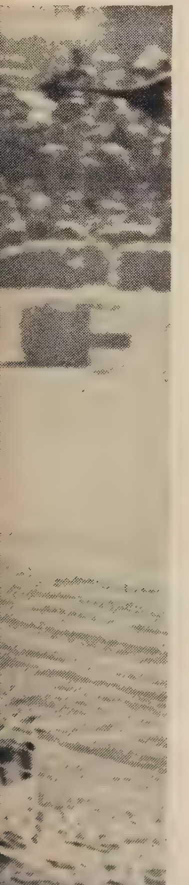
Silver Dawn

SALON





ABOVE—Luigi Fagioli who placed second in the European Grand Prix driving a reactivated Type 158/47 Alfa Romeo. LEFT—Juan Fangio in Type 158/47 Alfa Romeo. This model is more highly supercharged and develops over 300 hp. BOTTOM—Yves Giraud-Cabantous leads Louis Rosier. Cabantous' Talbot is the newer model having dual spark plugs.



European Grand Prix, Silverstone

GUY GRIFFITH PHOTOS

With an ear-shattering blast the first Grand Prix of Europe to be held in England got underway at Silverstone on May 13 before an enthusiastic 120,000 crowd.

At the fall of the flag the four type 158/47 Alfas in the first row surged ahead, Bira in a Maserati holding for the first 100 yards.

The Alfa team led easily all the way, with the lead alternating among themselves.

Bira's Maserati led the next group for 50 laps, then fuel-feed difficulties halted him on the course, leaving Cabantous in his Talbot leading this "second section" followed by Rosier (Talbot), and Harrison and Gerard in 13 year old E.R.A.s.

Louis Chiron in a 4CLT Maserati never got into stride and retired with a broken oil line at lap 24 as did Fangio at lap 62.

The Alfa Romeos began their refueling pit stops at 36 laps and since all were in and out in less than 30 seconds the first four positions changed only among themselves. The three that finished led by six miles and Gerard and Harrison by nine.

The Grand Prix was preceded by two 500 cc heats and a final which were run in the "500 manner"—tight groups of screaming little cars battling for the lead.

RESULTS

Grand Prix

70 laps (210 miles) one lap 2.9 miles.

1. Guiseppe Farina (Alfa Romeo 158) 2;13:23.6 (90.95 mph)
2. Luigi Fagioli (Alfa Romeo 158) 2;13:26.2
3. Reg Parnell (Alfa Romeo 158) 2;14:15.6

Fastest Lap

Farina, 1:50.6 (94.02 mph)

500 cc Race

Final: 10 laps (29 miles)

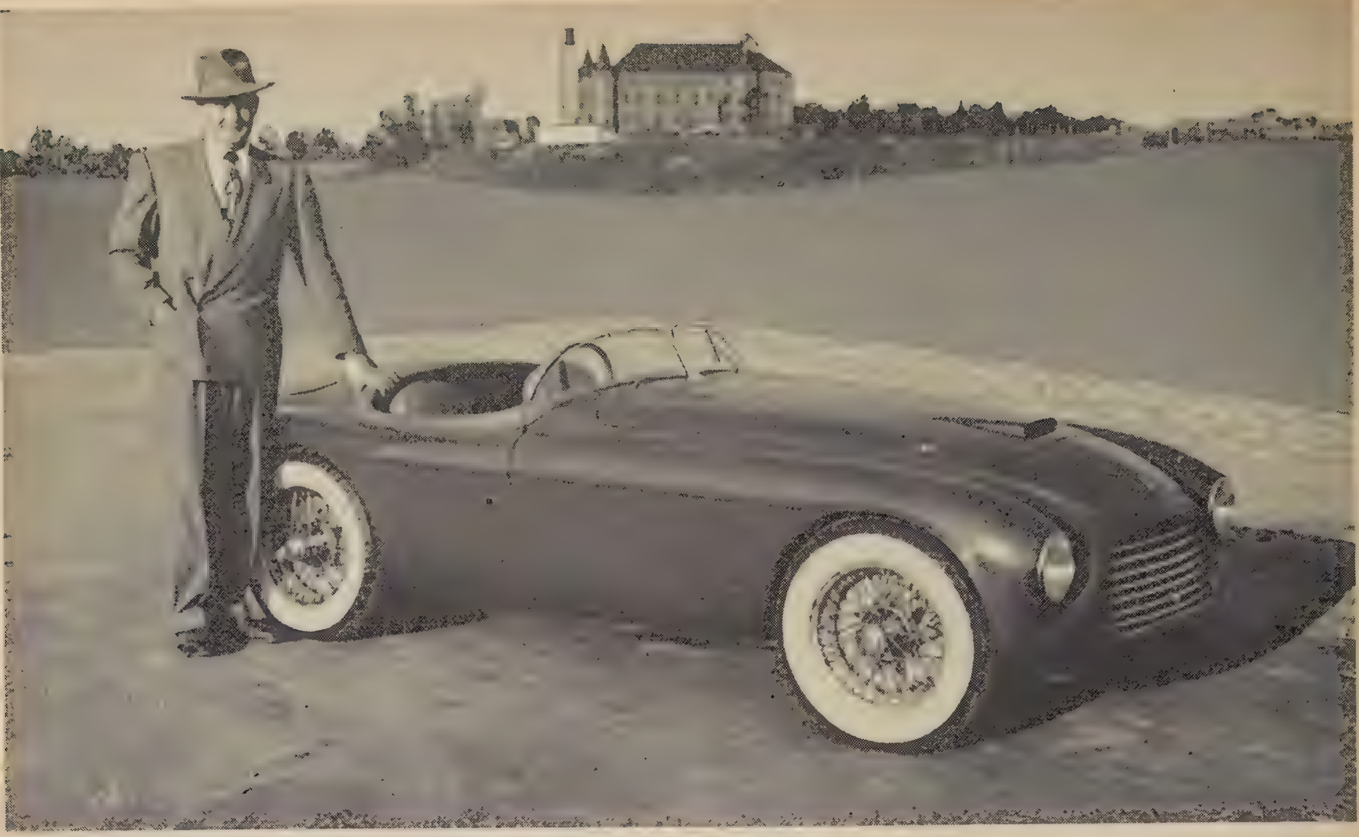
1. Wing Cdr. Aikens (Iota Triumph) 21:51.6 (79.29 mph)
2. Sterling Moss (Cooper J.A.P.) 21:53.8
3. P. J. Collins (Cooper Norton) 21:54.0

LUIGI FAGIOLI

In 1934, Mercedes engaged the Italian Ace, Luigi Fagioli, as a team driver. Luigi was a great character, tremendously strong, frequently unshaven, known affectionately as "the old Abruzzi robber," whose one aim in life was to win races. This independent attitude was hardly in keeping with the strict discipline demanded by Neubauer, with whom Fagioli had many a contretemps. In spite of any instructions to the contrary, Fagioli maintained that as he was the fastest driver in the team he was entitled to win, even to the extent of having an inter-team dust-up to achieve his object. Various subterfuges were tried, such as a deliberate "go-slow" by the mechanics during his pit stop, but this generally resulted in Luigi going faster than ever before, and on at least one occasion, to show his displeasure at such treatment, he abandoned his car on the roadside some distance away from the pits!

Fagioli started his motor-racing career at the wheel of a Salmson in voiturette events, being third at Pescara in 1926, second in the Targa Florio in 1927, and second at Tripoli in 1929. For the next three years he drove exclusively for Maserati, winning at Montenero and Avellino in 1930, being first at Monza and second at Monaco and Tunis in 1931, and first at Rome, second in the Italian Grand Prix, Monza and Masaryk and third at Monaco and Avellino in 1932. In 1933 Luigi Fagioli joined the newly-formed Scuderia Ferrari, and driving a P3 Alfa-Romeo was first in the Italian Grand Prix, Comminges and Pescara, and second in the Spanish Grand Prix, Marseilles and Masaryk. The following year he drove for Mercedes, being first in the Italian Grand Prix (with Caracciola), and Spanish Grand Prix and at Pescara, and second in the German and Masaryk Grand Prixes. In 1935 he won at Monaco, Avus, and Penya Rhin, was second in the Swiss, Belgian and Spanish Grand Prixes, and third at Tripoli, and the following year third at Tripoli, fourth with Lang in the Swiss Grand Prix, and fifth with Caracciola in the German Grand Prix. Luigi Fagioli won six major races for Mercedes, as well as being instrumental in teaching the other members of the team the Grand Prix style.

—from "Grand Prix Racing, Facts and Figures" by George Monkhouse.



Mille Miglia Ferrari

Good proportions of the Ferrari belie its small size and lowness until an index of comparison, such as the gentleman above, is used.

At the close of the 1949 European racing season, many motor sports writers made the observation, "This was a Ferrari year!"

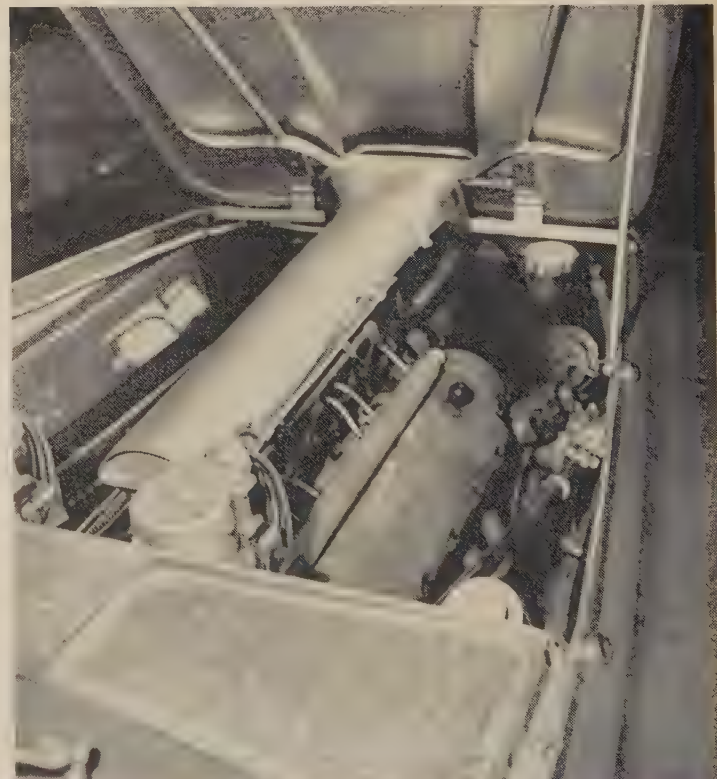
And truly it was, for this post-war new-comer from Italy had swept before it all opposition to win an outright victory in a score of events ranging from the Mille Miglia and Grand Prix to International record runs. To qualify in various racing categories, the Ferrari is made in a large range, covering types from a two-stage blown Grand Prix race car to a sleek coupe.

The Mille Miglia Ferrari was so named because of the 1949 victory in that event by C. Biondetti, using the prototype. Cataloged as "Lo Spyder 166* Mille Miglia," this 137 mph gem is powered by 60° V-12 which produces 140 BHP at 6,600 rpm with a displacement of 1995 cc (1.15 hp/cu. in.). Bore and stroke are 60 mm x 58.8 mm and compression ratio is 10 to 1. Each bank of cylinders has a single overhead cam which also drives a magneto. A five-speed transmission allows maximum utilization of available revs.

The tubular-frame chassis has a 87″ wheelbase and a front tread of 49¼″ (rear is 2″ less). Rudge wire wheels, carrying 5.50x15 tires, aid the cooling of large diameter hydraulic brakes. One of the factors which contribute to the Ferrari's outstanding performance is its low weight—only 1430 pounds for the Mille Miglia.

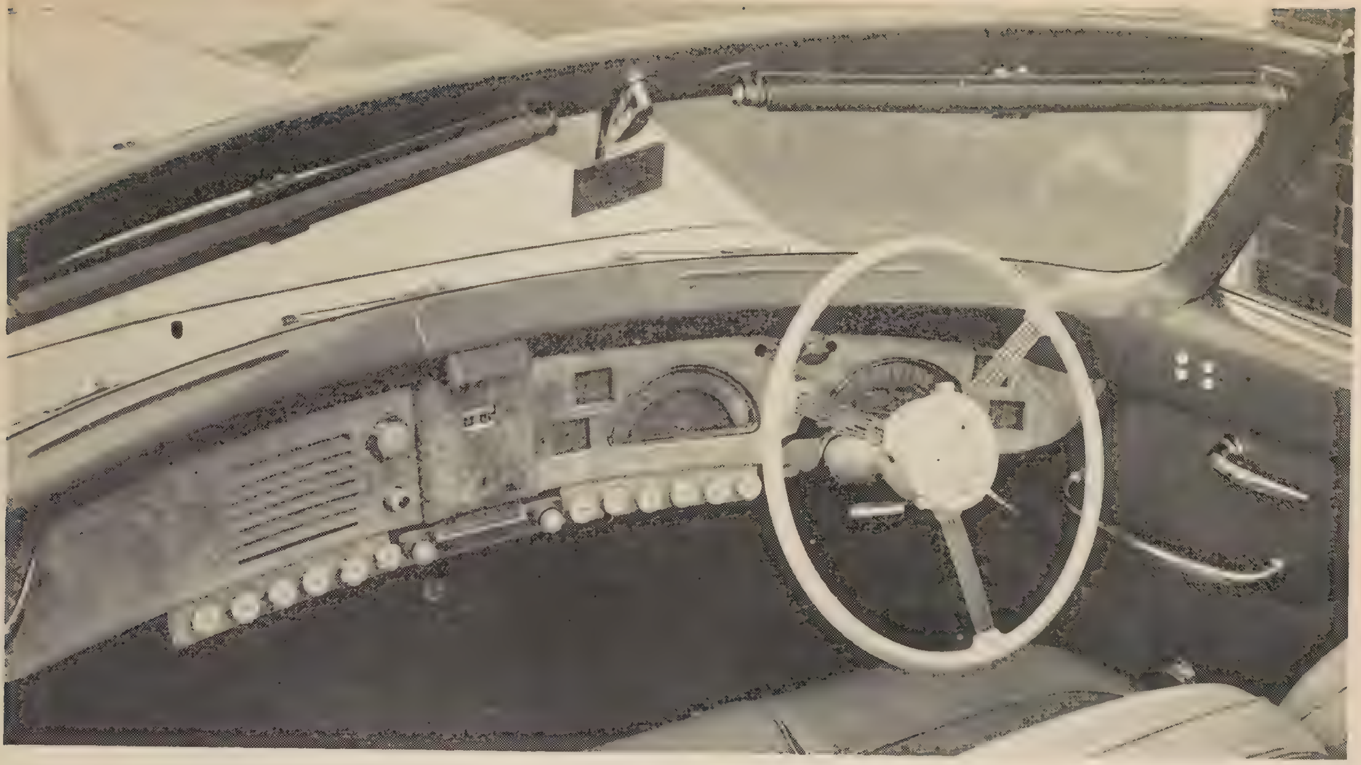
This is the car I would like to own, but—I havent got the $15,500.

*166 cc per cylinder

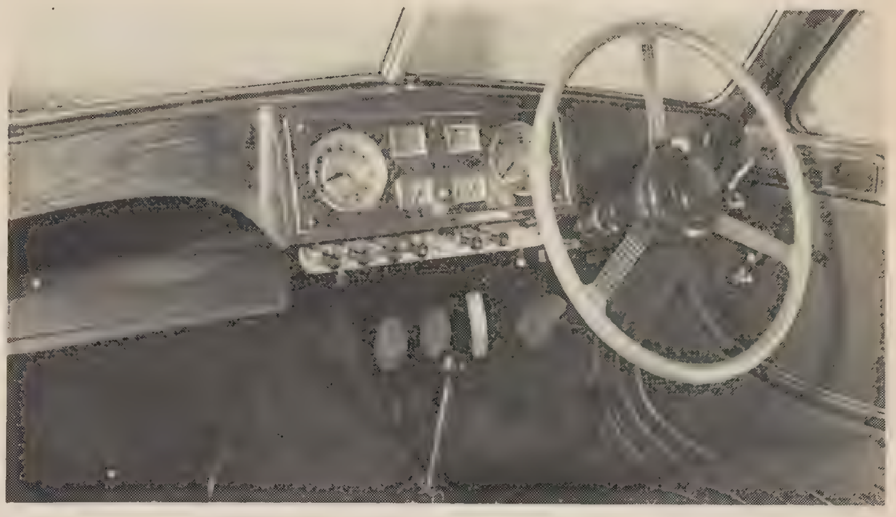


A ram-type air scoop mates with a slot in the hatch-type hood to distribute air directly to the three carburetors of the V-12 engine.

The completely functional, yet beautiful, Mille Miglia Ferrari shown on this page was owned by that great motor enthusiast, the late Thomas S. Lee.

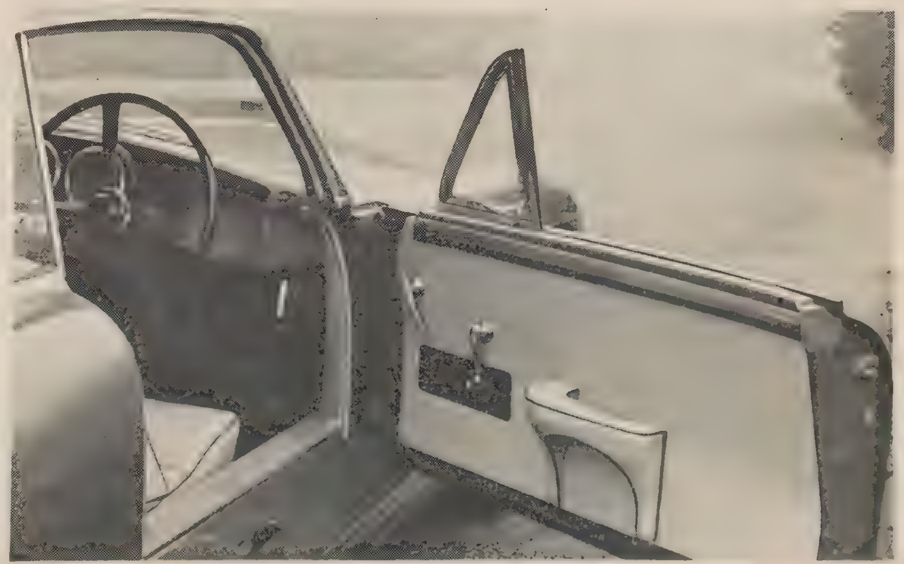


Interiors



The Daimler convertible coupe by Hooper, exhibited at the New York British Auto Show where it was purchased by James Melton, is an example of superb craftsmanship. Three individual front seats provide personal adjustment while giving the appearance of a single unit. Select leather upholstery is used thruout. Fittings include three windshield wipers and roller-type sun visors. Four buttons at driver's right control electrically-operated windows. The top lowers automatically and is fully concealed within the body. Equipment includes radio and "air conditioning."

The interior of the 2½-litre Riley may be termed "typically British." Gold-finish instruments are mounted in a removable panel of walnut. Many British cars feature fine woods for interior trim. An open shelf takes the place of our glove compartment. "Map pockets" on the bottom of doors are popular, while center instrument location is favored. High tunnels provide low seating. Front doors open forward and a "sunshine roof" or "sliding head" is available. Control pedals pivot at the heel and the gear-shift lever is located on top of the tunnel.



Best described as "The car you step *way* down into"*. the famous Aston Martin cradles the passengers low between the square-tube frame rails. The clean, businesslike interior seems appropriate for the competition nature of this LeMans-breed aerodynamic coupe. A sense of security is obtained from the plain but solid construction and trim. The rich leather upholstery is trimmed with beading of contrasting color. Note the deep "cubby-locker" in the dash and map-case in door.

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*Apologies to Hudson.

ANTIQUE AND VETERAN

"THE RAMBLER"

By W. Everett Miller

In 1879, when Mr. Thomas B. Jeffrey named his first penny-farthing bicycle the "Rambler", it is doubtful that he had any prophetic visions of the self-propelled streamline "Rambler" quadricycle of 71 years hence.

This new name on the automotive horizon has a colorful background. The firm of Gormully & Jeffery Manufacturing Company was organized in 1881 and succeeded in taking their just share of the prosperous bicycle business. They made their own tires, the G. & J., which were well known to the bicycle world. The U.S. Rubber Company later absorbed this activity.

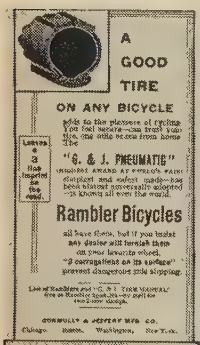
The Rambler bicycle was merged, in 1899, with the American Bicycle Company, controlled by the Pope Mfg. Co. of Hartford, Conn., makers of the famous "Columbia". This combine included H. A. Lozier's "Cleveland" bicycle. Pope's Electric Vehicle Company also had purchased the Selden Patent and formed the Association of Licensed Automobile Manufacturers, which extracted royalties for cars manufactured by its members and prosecuted non-members for infringement.

Meanwhile, a new company was established by Thomas B. Jeffery and the "Rambler" automobile was placed on the market in March 1902. For 12 years the Rambler name adorned many picturesque models of this famous Kenosha company.

Jeffery died in 1910, and in 1914 the car was renamed "Jeffery" in his honor. Later it was changed again (to "Nash") after the business was purchased by C. W. Nash.

Perhaps Mr. Edward S. Jordan was responsible for most of the advertisements that appear here. Subsequently he wrote many memorable advertisements for his own "Jordan" cars.

1894


A GOOD TIRE

ON ANY BICYCLE

adds to the pleasure of cycling. You feel secure—can trust your tire, one mile or ten from home. The

"G. & J. PNEUMATIC"

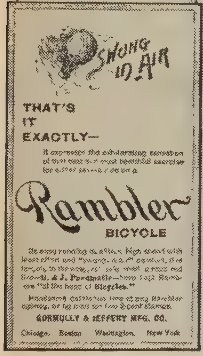
simplest and safest made—has been almost universally adopted—is known all over the world.

Rambler Bicycles

all have them, but if you insist any dealer will furnish them on your favorite wheel. "3 corrugations on its surface" prevent dangerous side slipping.

GORMULLY & JEFFERY MFG. CO.

Chicago. Boston. Washington. New York.


Swing in Air

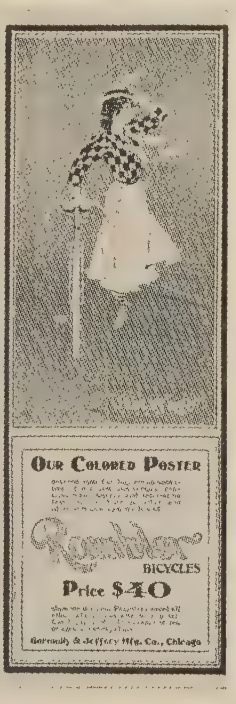
THAT'S IT EXACTLY—

Rambler BICYCLE

GORMULLY & JEFFERY MFG. CO.

Chicago. Boston. Washington. New York

1899

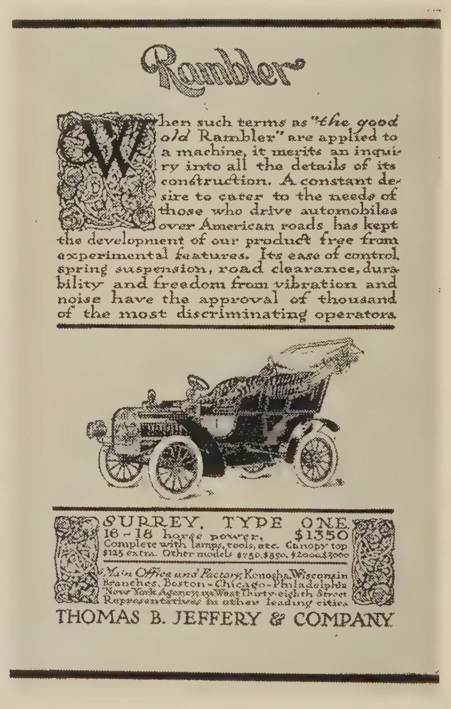

Our Colored Poster

Rambler BICYCLES

Price $40

Gormully & Jeffery Mfg. Co., Chicago

1905


Rambler

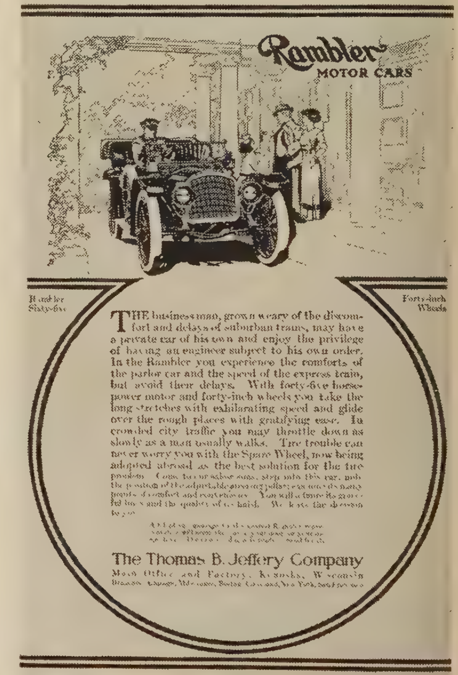
When such terms as "the good old Rambler" are applied to a machine, it merits an inquiry into all the details of its construction. A constant desire to cater to the needs of those who drive automobiles over American roads has kept the development of our product free from experimental features. Its ease of control, spring suspension, road clearance, durability and freedom from vibration and noise have the approval of thousand of the most discriminating operators.

SURREY, TYPE ONE.
16 - 18 horse power, $1350
Complete with lamps, tools, etc. Canopy top $125 extra. Other models $750, $850, $2000, $3000

Main Office and Factory, Kenosha, Wisconsin
Branches, Boston - Chicago - Philadelphia
New York Agency, 134 West Thirty-eighth Street
Representatives in other leading cities

THOMAS B. JEFFERY & COMPANY

1911


Rambler MOTOR CARS

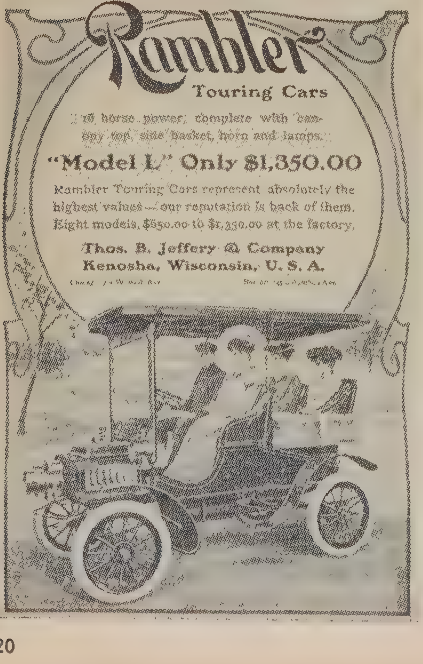
Rambler Sixty-five
Forty-inch Wheels

THE business man, grown weary of the discomfort and delays of suburban trains, may have a private car of his own and enjoy the privilege of having an engineer subject to his own order. In the Rambler you experience the comforts of the parlor car and the speed of the express train, but avoid their delays. With forty-five horsepower motor and forty-inch wheels you take the long stretches with exhilarating speed and glide over the rough places with gratifying ease. In crowded city traffic you may throttle down as slowly as a man usually walks. Tire trouble can never worry you with the Spare Wheel, now being adopted abroad as the best solution for the tire problem.

The Thomas B. Jeffery Company

Main Office and Factory, Kenosha, Wisconsin

1904


Rambler Touring Cars

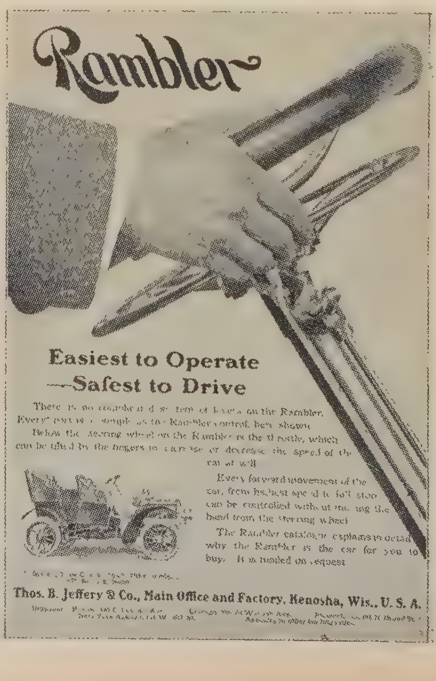
16 horse power, complete with canopy top, side basket, horn and lamps.

"Model L" Only $1,350.00

Rambler Touring Cars represent absolutely the highest values—our reputation is back of them. Eight models, $550.00 to $1,350.00 at the factory.

Thos. B. Jeffery & Company
Kenosha, Wisconsin, U. S. A.

1905


Rambler

Easiest to Operate
—Safest to Drive

There is no complicated system of levers on the Rambler. Every control is simple as the Rambler control here shown.

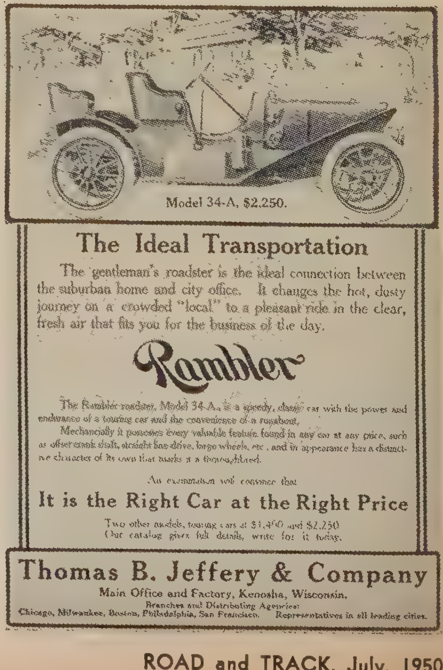
Below the steering wheel on the Rambler is the throttle, which can be tilted by the fingers to increase or decrease the speed of the car at will.

Every forward movement of the car, from highest speed to full stop can be controlled without moving the hand from the steering wheel.

The Rambler catalog explains in detail why the Rambler is the car for you to buy. It is mailed on request.

Thos. B. Jeffery & Co., Main Office and Factory, Kenosha, Wis., U. S. A.

1908


Model 34-A, $2,250.

The Ideal Transportation

The gentleman's roadster is the ideal connection between the suburban home and city office. It changes the hot, dusty journey on a crowded "local" to a pleasant ride in the clear, fresh air that fits you for the business of the day.

Rambler

The Rambler roadster, Model 34-A, is a speedy, classy car with the power and endurance of a touring car and the convenience of a runabout.

Mechanically it possesses every valuable feature found in any car at any price, such as offset crank shaft, straight line drive, large wheels, etc., and in appearance has a distinctive character of its own that marks it a thoroughbred.

An examination will convince that

It is the Right Car at the Right Price

Two other models, touring cars at $1,400 and $2,250
Our catalog gives full details, write for it today.

Thomas B. Jeffery & Company

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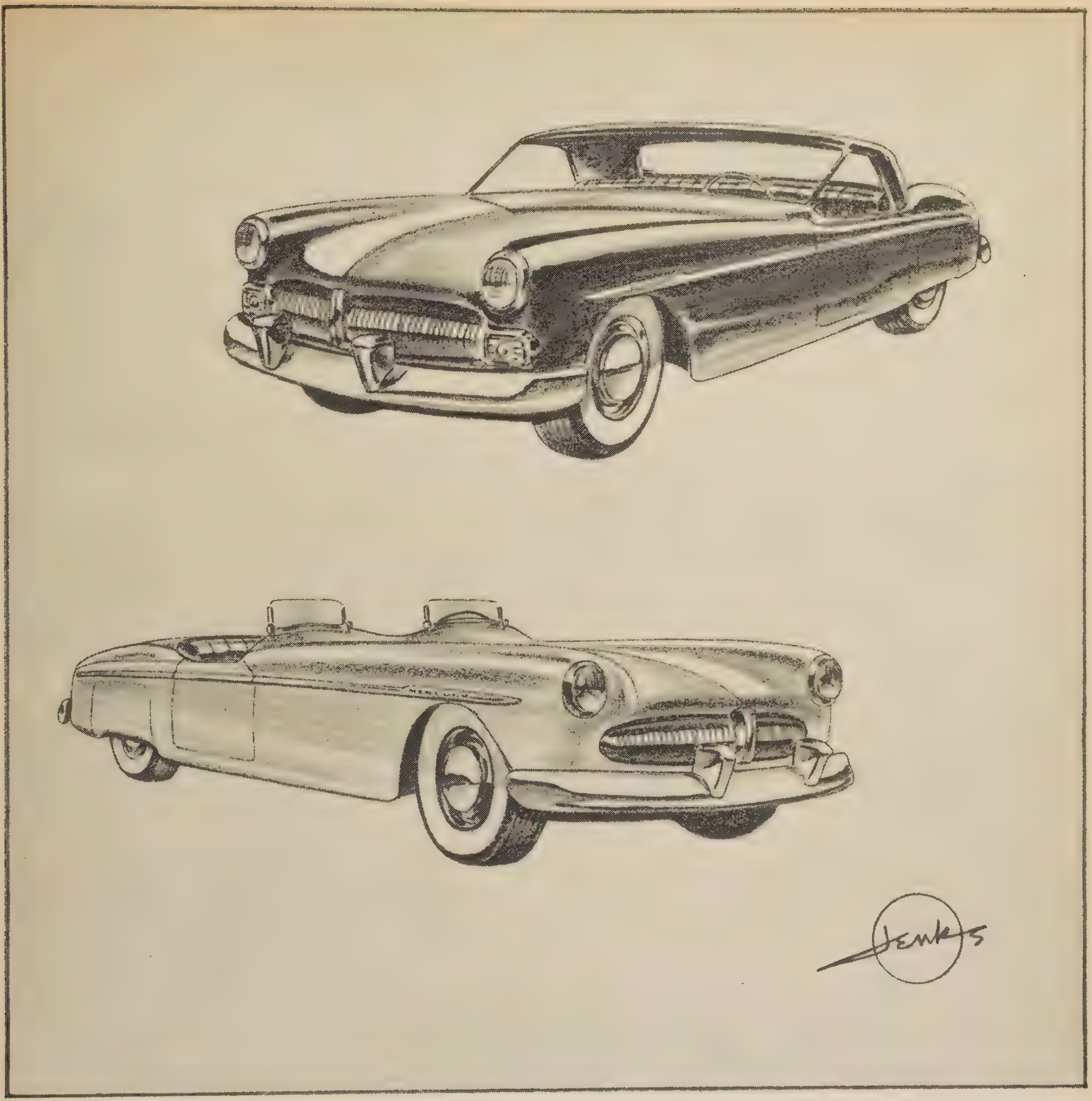


SKETCH PAD

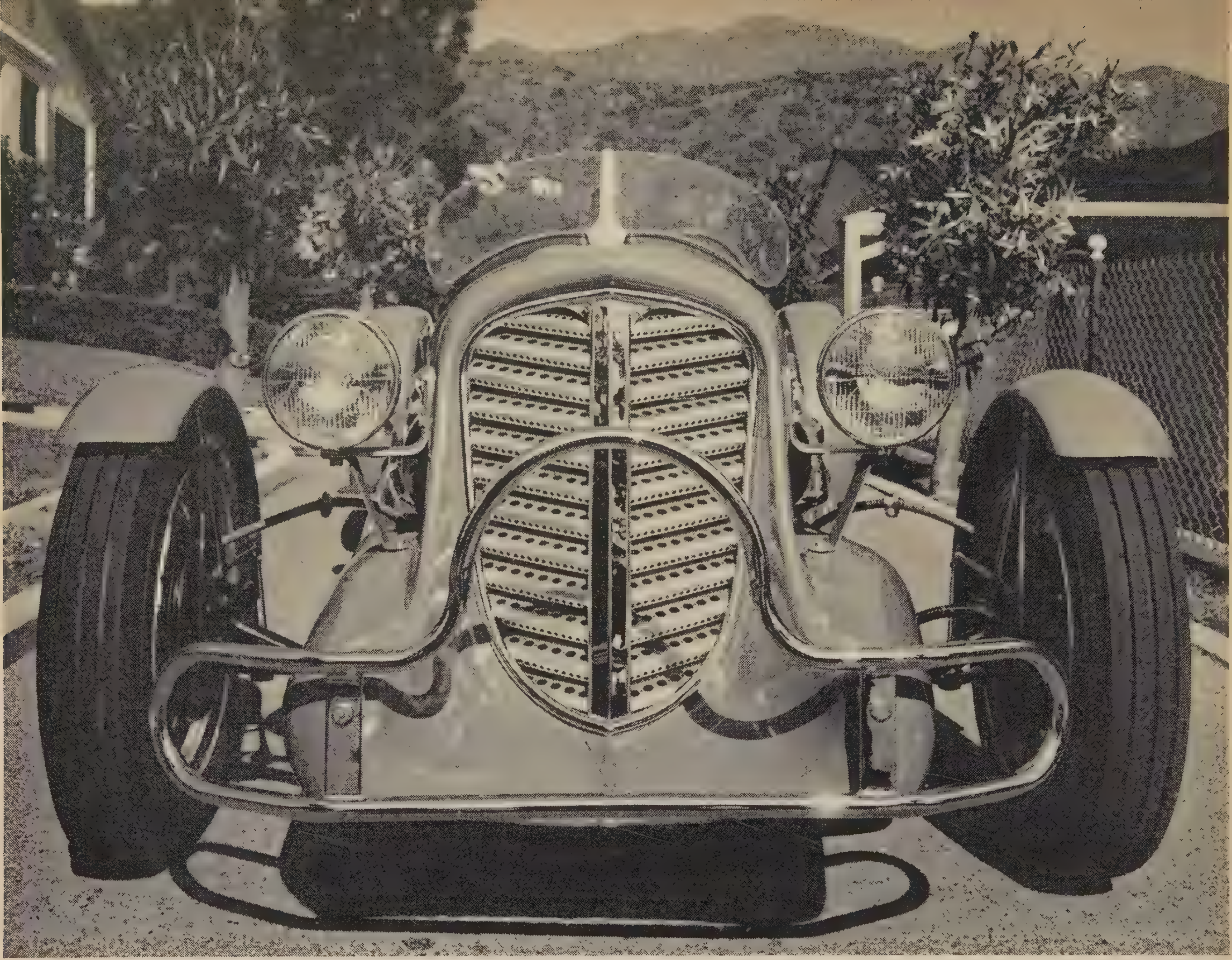
by Bill Jenks

1950 MERCURY

The "Merc" (Mercury, not Mercedes) has long been a favorite of California customizers who chop, channel, shave, french, and lower to create a "dream boat". Interchangeability of parts with those of Ford results in novel, and sometimes pleasing, combinations. With the introduction of the 1949 models, the Mercury abandoned its role of "the big Ford" and became "the little Lincoln", a move which should inspire a new theme of redesign. Having passed, we hope, the "dragging-rear-end, nose-in-the-air, stretched-out-fender stage", these enthusiasts who wish to transform their automobiles into distinctive cars will again predict the future by adopting a cleaner and more appealing form.

Two versions of the "Jenks treatment" have been given the 1950 Mercury. The coupe has a severely plain aluminum alloy top which is removable. Windshield corner pillars are very thin due to the use of chrome-moly tube-cum-channel construction. A "breathing slot" is incorporated in the wide vision rear window. Major portions of the body are from the stock Mercury with modifications such as cut-away doors and a fin effect on the rear fenders. The very low hood, which sweeps right down to the grille, is an entire new unit, as is the lowered rear deck. Almost all of the body, excepting the top, is lower than the top of the fenders. Overall height is 55 inches.

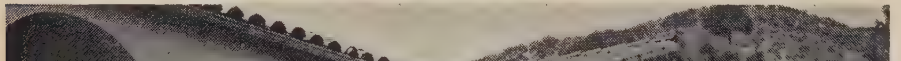
The lower "Merc" is lower—only 41" to the top of the aero-screens. A "veddy-English" flavor is provided by the twin cowl design and cutaway doors. Altho the same basic original sheet metal is employed in this car as was used for the coupe, the hood line is slightly lower. With suitable alterations to steering, suspension, brakes, and gearing, along with the use of specialized speed equipment (available in a wonderful variety), this "messenger of the god's" becomes a pukka sports car.



PHOTOS BY J. B. SHACKLEFORD

Homebuilt Sports Car

FRED STAMMER SHOWS REMARKABLE CRAFTSMANSHIP ON HIS WILLYS-FORD "60"



In a garage which contained a German BMW shaft-drive motorcycle, a special J.A.P. lakes bike, a "Snortin'" Norton, and a well-preserved Graham "Hollywood", it was no great surprise to find in the middle a car such as the Stammer Sports.

Two years ago, when Fred Stammer of Burbank, California, faced the bitter truth that he just couldn't afford an M.G., he decided to build a sports car of his own. The results, clearly a product of great originality, are most pleasing.

Rather than use a large engine with "bags of power", he chose to stay as close as possible to the size of the M.G.s which his more affluent friends were driving, and so selected the Ford V-8 "60."

A 1936 "European Style" Willys 77 was the source of the major portions of the chassis—the frame rails, axles, wheels and steering gear. The Ford-Willys transition was made with a built-up universal behind the "60" transmission. On the advice of a brake specialist, the Willys cable-operated units were retained and have proved very satisfactory.

The driver's compartment is striking—extensively decorated with mahogany, hand-carved by Stammer's father, and neatly upholstered in fine, pleated leather. Gear changing is remotely effected by levers similar to the old Cord arrangement. Carved mahogany over a $3/8''$ steel core forms the steering wheel. The Lucite windshield may easily be removed and replaced with racing shields for sports events.

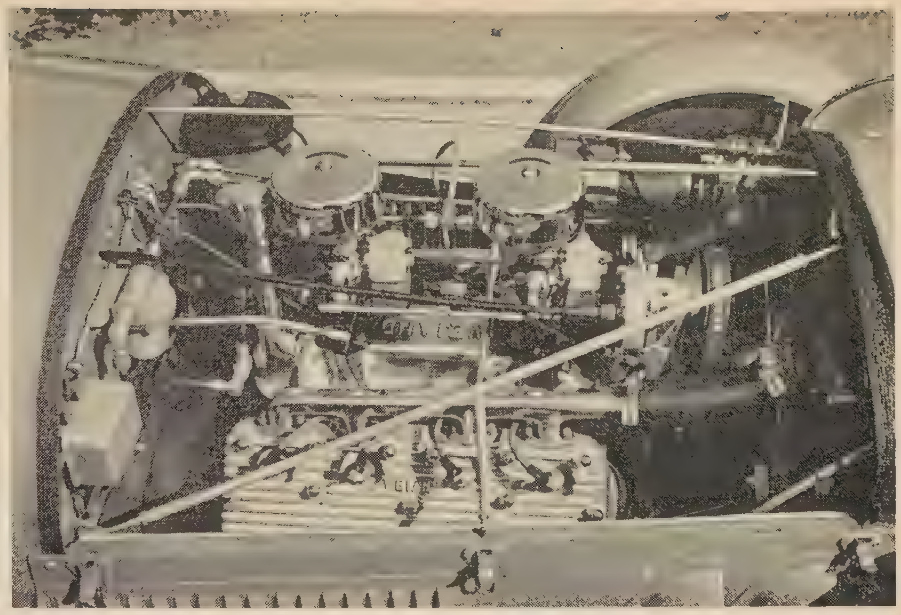
One of the more unusual innovations in this car is a manually operated water injection system, which Stammer has found to give a definite improvement in performance. The pump on the left of the cowl supplies pressure for the water tank.

The Cadillac "Robin's Egg Blue" finish covers all traces of the more than one-thousand flush rivets which were used in the aircraft-type construction of this car.

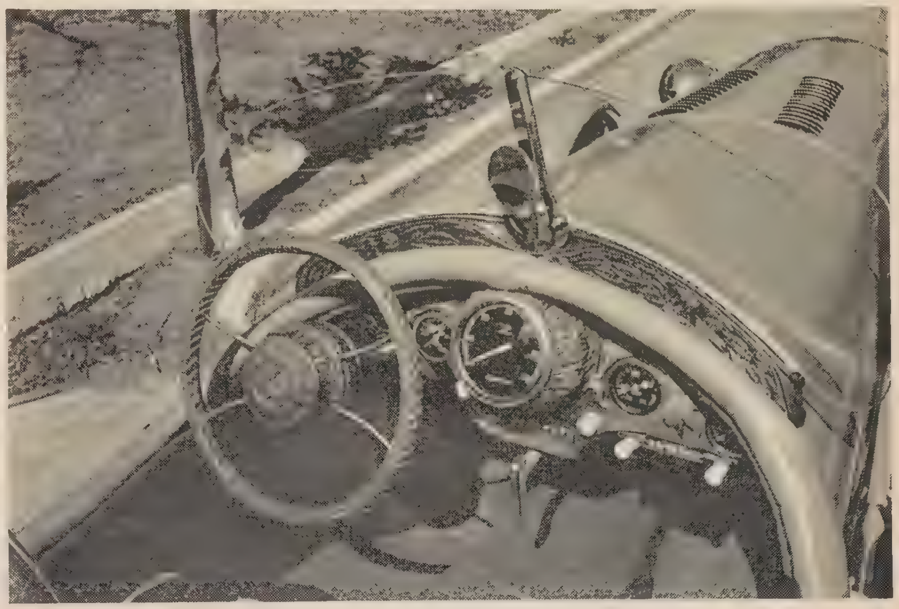
While high speed runs were not made, 5000 rpm could be reached easily in second gear. Tests on a winding road showed quite satisfactory handling qualities as well as reasonable, tho not neck-snapping, accelleration.

SPECIFICATIONS

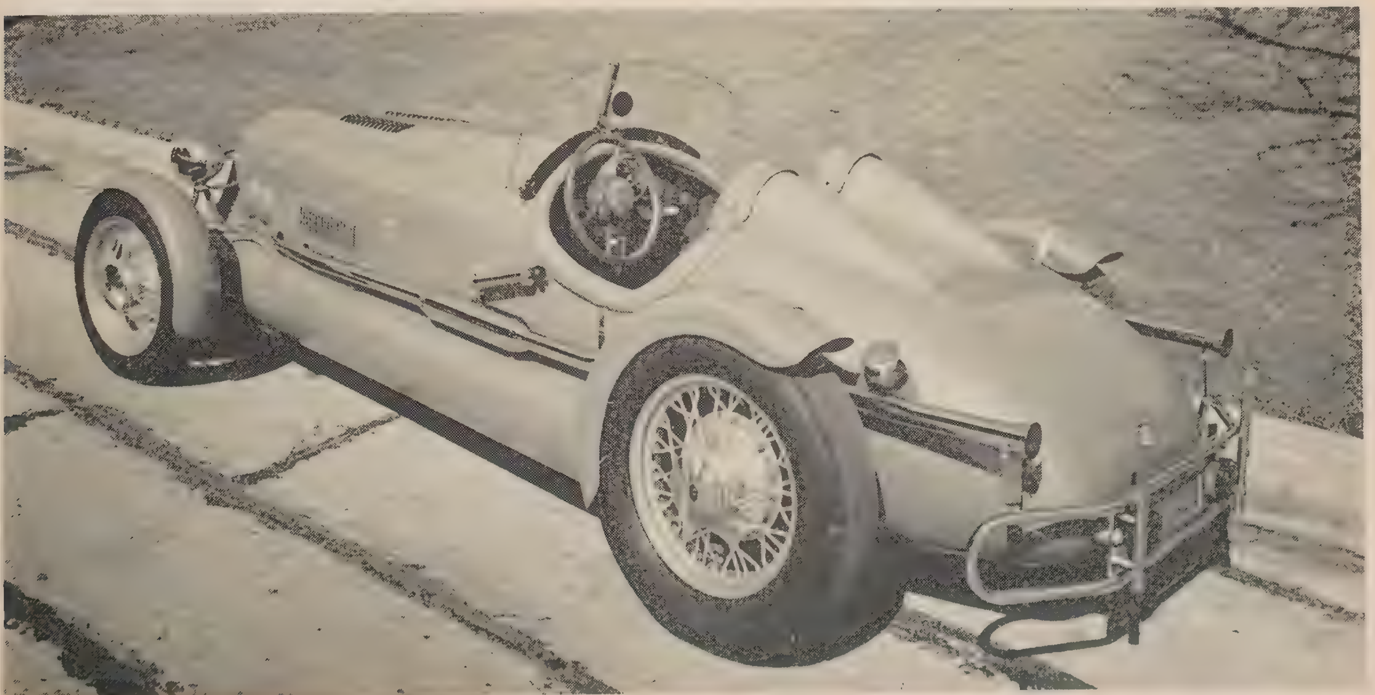
Engine	Ford V-8 "60" Weiand heads and manifold 136 cu. in. displacement Polished ports Lightened flywheel
Chassis	Willys 77 Wheelbase 98″ Height 34½″ Axle ratio 4.43:1 Tires Front 5.50 x 15 Tires Rear 5.50 x 17 Suspension: Longitudinal semi-elliptics front and rear
General	Weight 1600 pounds 20 mph/1000 rpm



TOP—Ford V-8 "60" engine is stock except for Weiand heads and manifold, polished ports, and lightened flywheel. Oil filter is heavy duty truck type. Note tach drive which Stammer built himself. Water injection lines discharge directly into air cleaners.



RIGHT—The beautifully carved dash and steering wheel would excite interest at a Concours d'Elegance. Instruments include tachometer, ammeter, oil pressure, temperature, and vacuum gauge, but no speedometer. 2500 on tach gives "cruising speed" of 50 mph. Formed seat back supports driver.



BOTTOM—Tho the car appears larger and higher, the top of the windshield actually just reaches the belt of an average man. Motorcycling background of builder is shown by use of Norton mufflers and Harley front fenders over rear wheels.

ROAD & TRACK PHOTOGRAPHY

Conducted by Karl A. Barleben

Editorial Note: *The editor takes pleasure in announcing that, starting with this issue,* Road and Track *will present pertinent photographic lore for the interest and guidance of its readers.*

We are particularly pleased to welcome Karl A. Barleben to the contributing staff of Road and Track, *since he is one of the outstanding and widely recognized authorities on photography in the United States.*

Karl A. Barleben has a background of more than twenty-five years continual experience in photographic and allied fields. In 1931 he was made a Fellow of the Royal Photographic Society of Great Britain for exceptional achievement in photography. He is well-known as a magazine contributor, author, teacher, lecturer and producer of radio and television programs, as well as motion picture productions.

For years he was Dean of the New York Institute of Photography and, during the last war, served in the U. S. Navy as head of a Naval Training School devoted to the advanced phases of motion pictures and aerial photography. He was also Associate Producer for Tomlin Film Productions, Inc., in New York for several years. At present he is Sales Promotion Manager for the Gevaert Company of America, Inc., New York.

As an added service, Mr. Barleben will be glad to provide any photographic information, suggestions, solutions to problems, or answers to questions, providing a stamped and addressed envelope is enclosed. Your comments as to what sort of photographic information you would like to see in future issues will be appreciated. Address all such communications to: Photographic Editor, care of Road and Track, *Box 409, North Hollywood, Calif.*

INTRODUCTION

Photography is fun!

But it becomes more meaningful and pleasurable when it can be combined with some other hobby or interest . . . automobiles, for example. That's one of the wonderful aspects of photography; it is not only a hobby in itself, but can serve as a hobby within a hobby.

Combining photography with road and track activities results in a double-barrelled thrill, since you not only enjoy your motor interests but can produce and preserve a pictorial record of them as well. Thus it is that you see more and more people carrying cameras about with them these days. While many of them, it is true, enjoy their cameras for the sheer pleasure that picture-taking affords — its tranquil effects upon jangled nerves which affect so many of us in these hectic and troubled times—many more have hit upon the happy thought of using their cameras to record other sport, hobby, and even business interests.

Readers of Road and Track must, by the very nature of their interests, be picture-takers; if not actually at this point, then at least potentially. Photography appeals to all forms of creative living because it provides that extra stimulation that stems from one absorbing hobby and blends with another. In our particular cases, we have genuine thrills and pleasures derived from our motoring experiences. They can key us up to a high pitch at times which, in many instances, leave us all but mentally exhausted. How better, then, to relax than with photography . . . taking pictures, developing the negatives, making the prints, in leisure hours. Best of all, these very same pictures can be the means of perpetuating our motoring interests, since they are of the activities which originally gave us the initial thrill.

Photography can be costly or inexpensive, depending upon how deeply you wish to delve into it. In general, however, it is no more expensive than any other activity or hobby. If you play golf or tennis, your equipment represents a certain amount of investment. The same with photography . . . excepting that with photography you are never bound by weather, climate or season. You can enjoy it at all times, indoors as well as out; winter and summer; rain or shine; with a companion or without. In this respect, the flexibility of photography knows no equal in comparable hobbies.

It should not be forgotten that using a camera, in addition to being fun, provides and stimulates many new opportunities in the sense that you learn to see and know detail better, your eyes becomes trained to see things which previously went by unnoticed, you come to appreciate the application of light and shade, and their effect upon the picture. In short, your viewpoint becomes broadened, continually bringing you new and fresh approaches to even ordinary subjects. Your cultural interests are stimulated which, in many cases, can develop into a number of side-road interests which you never even thought of before.

For example, the photographing of a simple subject such as an automobile may appear to be child's play . . . but you get out and try it sometime and see what happens if you ignore the rules of perspective, optics and physics. In future issues I'll attempt to clarify this statement and point out how it is possible to avoid "fore-shortening" and similar pitfalls that most beginners run into. Nor is it all dry technical stuff, either. Adventures with a camera can be fascinating, since each subject presents a new set of problems to be overcome, some technical, perhaps, others pictorial.

Nor is developing and printing dull, tiresome routine in a dark, stuffy room. On the contrary, darkroom work is simple, relaxing and . . . highly creative, since actually the final print is the result of various manipulative controls like shading, dodging, cropping and masking. Very often a mediocre negative, pictorially speaking, can be doctored up in the darkroom with the enlarger so that it finally presents a perfect specimen of artistic effort.

In the process of developing the negatives and producing prints, you become acquainted with various phases of chemistry, learn how to avoid future mistakes in shooting, and how to improve the final prints. In other words, you will be making a serious mistake by merely exposing film in the camera and then letting some outside agency, such as the corner drugstore, do the rest. Taking the picture is really only the beginning of the photographic process. It is not the end. Only after the film has been exposed does the fun really begin. It is a notable fact that those who carry their pictures thru to completion themselves always have consistently better results. This is only natural, since by following the pictures thru the entire process it is possible to quickly learn to avoid various errors in shooting, in exposure, in focus, in composition. You cannot discover those mistakes by taking the pictures only.

In future issues, various aspects of photographic lore will be presented with a view of acquainting those of you who are beginners with the essentials. For example, in the next issue, it should be appropriate that we consider various types of cameras, since to the beginner, the choice of a camera presents unique problems . . . problems which should be avoided when you are laying out hard cash for an instrument that you are hazy on. Remember that there is really no such thing as a "universal" camera that is "good for everything" . . . no more than a given car or motor is "universal" in its application. Touring cars are designed for certain work, while racing cars are intended for an entirely different sort of duty. To say they are both automobiles, while true, is indeed false in the sense of their function and capabilities to handle all assignments. The same goes for cameras.

So it is a logical place to start at the beginning and discuss at least those types of cameras which would be best suited to the exacting requirements of motoring photography . . . in both color and black and white. Techniques for photographing races will be presented, as well as techniques best suited to shooting "portraits" of cars.

It is to be hoped that this new department, which is dedicated to being helpful and useful to you, may merit your interest. If you have not as yet discovered the benefits and pleasures of photography, either separately or in conjunction with your other interests, perhaps this department may sufficiently stimulate you to the point of at least giving picture-taking a whirl. Meanwhile, I shall be delighted to hear from any readers who have problems or questions concerning photography. I would also like to hear from those who have had various photographic experiences which would be of interest to other readers . . . we can make this an exchange-of-experiences department, too, which should be stimulating. Have any photos of cars or races you are particularly proud of . . . that you made . . . ? Send them in and, space permiting, we'll print them. Please regard this as your department. Tell me what you want to see on this page, and how I can be of assistance.

CLUB ACTIVITIES

NEW YORK-INDIANAPOLIS RALLY

Fourteen cars left New York at Noon on Saturday, May 27th and one left the Washington Control simultaneously. All cars converged on Control No. 2 at Jonestown, Pa., where SCCA Marshals waited to check them in and out and date-stamp their route cards. From Jonestown, competitors proceeded along the Turnpike and over the Pennsylvania hills to Wheeling, West Virginia, where they began to arrive around 9:45 P.M. At Wheeling, a "sleep stop" was allowed, of six hours' duration, which included refueling, repairs, and eating and sleeping time. Hotel reservations had been made for all competitors near the checking point.

At Dawn the next morning, the cavalcade was again sent on its way, at five-minute intervals, to the next Control at Columbus, Ohio. Here there was considerable press interest and the taking of many photographs. The *Columbus Star* ran quite a story on this Monte Carlo-type Rally and there is, it seems, enough local interest in sports cars to form a new SCCA Chapter.

The final control was at the Naval Armory in Indianapolis where a tremendous reception awaited the arriving cars. At least fifty Chicago and Detroit members were on hand with their sports cars to greet Rally competitors, and this is saying nothing of the Indianapolis region itself. At a dinner held at La Rue's Restaurant on the Monday evening (May 29th) which was attended by some two-hundred SCCA Members, the Rally trophies were presented. *First Place* went to John and Henry Van Driel, brothers from New Jersey, driving a TC Type M.G. *Second Place* was awarded to Garrett Cashman and Ned Morton in a TC Type M.G. which Cashman had owned for only six weeks. *Third Place* went to Ruth Sands Bentley and Bernece Neilan in my Jaguar XK-120 which, incidentally, Ruth drove single-handed thruout the 720 mile treck. Competitors were given distances between Controls and average speeds, and were required to work out their estimated time of arrival by means of the formula: D x 60 over Average Speed.

Weather conditions were pretty bad, especially on the Turnpike and Pennsylvania hills where rain and darkness made the going really rough. One crew (David Ash and Anise Martin, TD-Type M.G.) came to grief on the Turnpike when a trailer swung out without warning and caught them as they were driving at 70 miles an hour. The M.G. rolled over and was completely wrecked, but by a miracle both occupants escaped unhurt. They were in no way responsible for the accident and proceeded to Indianapolis aboard another competitor's car, that of John F. Alexander, driving a Ford V-8.

Tom McCahill of *Mechanix Illustrated* was also a competitor, handling a special Grancor-Ford, and gave an excellent account of himself.

JOHN BENTLEY

AUTO MANIACS OF AMERICA

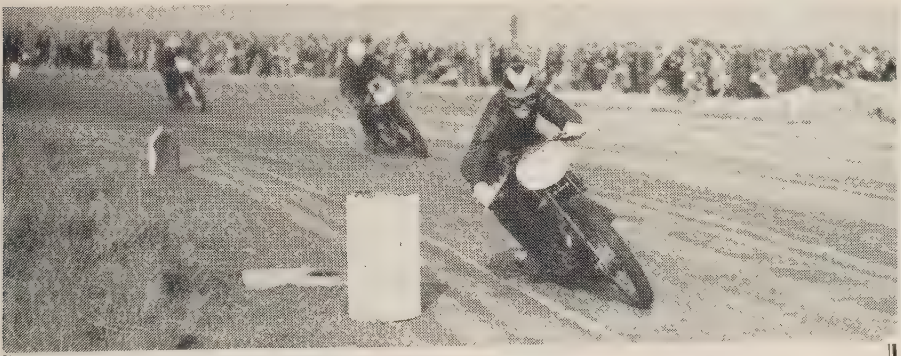
In conjunction with a claim of the largest single automobile hobby club in the United States, the president of Auto Maniacs, Inc., F. W. Thompson, said "We propose to make Auto Maniacs one of the best motor clubs in the world, as well as the biggest, simply by offering the maximum values and services for the membership of the Auto Fan."

As evidence of their constant striving to serve the members, Auto Maniacs have now started reproduction of old domestic and foreign automobile catalogs, hereby making available to all their members the best in old car literature from the outstanding collections in America. This will be in addition to their normal stock of current automobile information — technical booklets, repair manuals, and engineering papers. A new Speed and Mechanix Advisory Staff will, without cost, attempt to answer mechanical questions of the membership.

Because of these new services, Harold L. Mayer, founder and Executive Secretary, says that the value of an Auto Maniacs membership has increased 50% in the last sixty days, and that all interested parties may get on the mailing list by writing him at Stockbridge, Michigan.

SANTA ANA ROAD RACE

From "blimps" to M.G.s! That's the story of the Santa Ana Naval Lighter-Than-Air Station. On June 25th the Station will be the scene of a nine-event road racing program with M.G.s forming the bulk of the entries. Efforts of Mr. George Cary, Jr., have been rewarded and this will go down in racing history as the first AAA sanctioned amateur road race on the West Coast. AAA officials will give driving tests in the morning before the races start, and those qualifying will be licensed for similar events for the remainder of the 1950 season.



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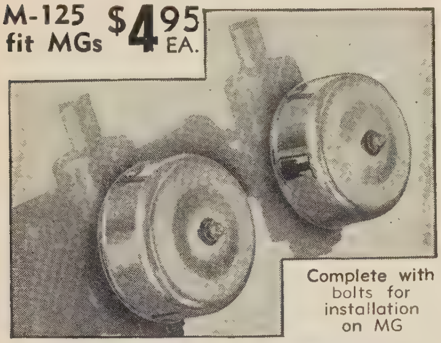
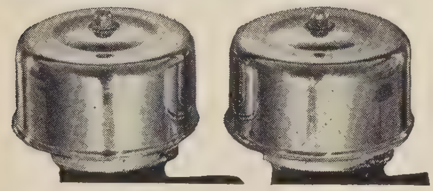


Complete with bolts for installation on MG



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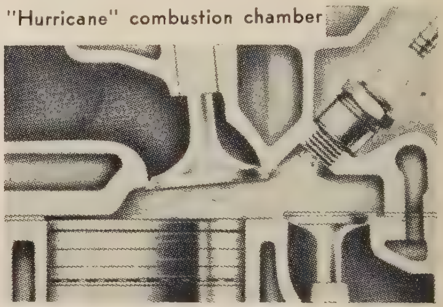
ROCKETS AND HURRICANES

(Continued from page 9)

1. Permits very large diameter valves in relation to bore size.
2. Allows compression ratios to 10 to 1.
3. Gives a low clearance or "quench" area for the last portion of the charge to burn.
4. Allows the plug to be located directly over the exhaust valve.
5. Gives a combustion chamber which is inherently "smooth" in operation.

Dealing with with each point in detail, the comparison with the dual overhead camshaft design, so dear to sports car enthusiasts (both in sentiment and dollars), becomes particularly interesting. Valve size on the F head can be nearly as large as on the dohc with spherical combustion chamber.

"Hurricane" combustion chamber



Compression ratio cannot go as high, due solely to dimensional limitations, but it is worth noting that an increase in compression ratio from say 10 to 12 gives about half the BHP % gain as does 8 to 10.

Regarding quench area, most investigators report that from 25 to 40 percent of the total flame travel should be in this area. To secure this is simple with either an L or an F head, difficult with an ohv, and impossible with the dohc unless valve size is reduced. On the Meyer-Drake race car engines (four, 4 5/16" cylinders) the valve size is reduced to give a very short quench area (less than 10 percent) which is not enough to be of any measurable benefit. In other words, using a 10 percent quench area might permit a higher compression ratio with the same fuel, but the potential power gain is cancelled due to the necessity of using smaller valves.

Ideal plug position depends on many variables, but burning the charge over the hot exhaust valve first will usually permit a higher ratio on the same fuel. The dual overhead camshaft offers little choice of plug location and is considered one of the poorest forms both from an anti-detonation standpoint and from its "roughness" characteristics.

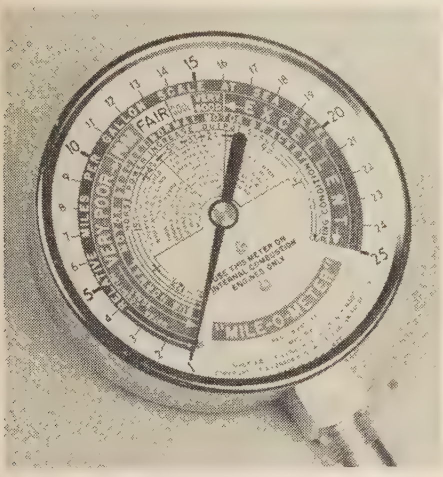
While standard compression ratio of the *Hurricane* is 7.4 an optional ratio of 7.8 is available and with the 3⅛" bore will undoubtedly operate at 7.8 more satisfactorily on the same fuel than will the oh *Rocket* with 7.25 compression ratio and 3¾" bore.

Despite the design disadvantages of the Willys "block" assembly, the writer believes this new engine to be one of the most interesting of the 1950 season. It serves, once again, to illustrate the principal that a poor basic design often can, by the process of engineering testing and development, be made to give results satisfactory to the consumer. The *Hurricane* is yet another step in the slow revolution and evolution process taking place, in which ultimately, virtually every passenger car in the world will be using either overhead valves, or some variation thereof, in order to insure maximum utilization of the slowly rising octane number of gasolines.

NEW PRODUCTS

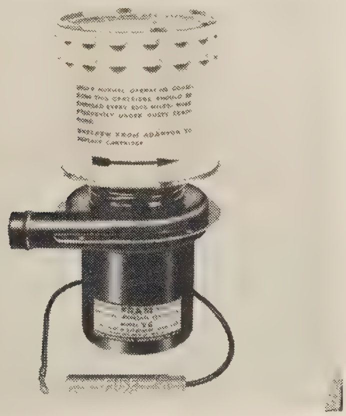
SPEEDO AND TACH REPAIR SERVICE FOR M.G.

A new speedometer and tachometer repair service for M.G.s and other foreign cars has been announced by California Bill, 4611 York Blvd., Los Angeles 41, California. Prices are reasonable and all work carrys a one year guarantee. This service also covers repairs to all other foreign car instruments.



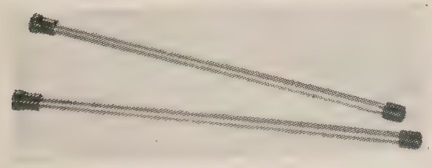
MILEAGE INDICATOR AND TUNE UP GAUGE

Said to give an accurate indication of engine condition and a relative gasoline mileage reading at all road speeds, a new gauge has been developed by Gale Hall Engineering, Boston 15, Massachusetts. The gauge can be fitted with the kit supplied, to any car in a minimum of time and provides a reminder by which one can improve driving technique.



POSITIVE PRESSURE CRANKCASE VENTILATOR

A new positive pressure crankcase ventilator by the Fram Corporation, Providence, 16, R. I. is claimed to be the first device to provide really adequate crankcase ventilation. Air is passed thru a filter attached to an electrically operated blower, thus assuring a constant supply of clean air to the crankcase regardless of road speed. Pressure forces out the blow-by fumes and vapors before they foul the engine by contaminating the oil.



LIGHT ALLOY PUSH RODS FOR CHEVROLET

New light-weight push rods for Chevrolet have recently been developed by Wayne Engineering Co., 3517 Encinal Ave., La Crescenta, California. While having greater strength than stock, they are 30% lighter and thus are an aid in eliminating valve float at high rpm.

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1949	Olds Rocket equipped with dual manifold accelerates to 80 in 14.6; 90 in 19 sec.!
1949	Chev with dual manifold on 540-mile proving ground run at 75 mph averages 18.8 mpg; increases top speed 9 mph.
1946	Ford with heads and manifold increases top speed 11 mph!
1940	LaSalle with heads and manifold averages 13.8 mpg at 85!
1946	Buick Roadmaster with manifold gains 22 HP!
1948	Pontiac 8 increases mileage 3 mpg!
1949	Ford with heads, no overdrive, averages 20.01 mpg on 3500-mile run!
1949	Stude Commander averages 24.8 mpg on 3500-mile run!

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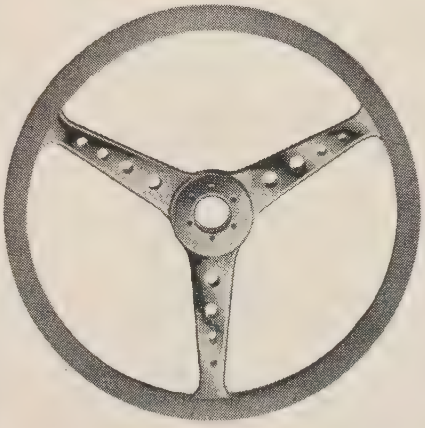
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PROVING GROUND SPEEDWAY

(Continued from page 11)

of the International Grand Prix formulas, nor is the design of the Indiana speedway very suitable for Grand Prix racing as we know it. The Proving Ground test tracks, however, would offer a choice either American speedway style, European road racing, or a combination as the speed ovals adjoin a large variety of multi-surfaced, winding test roads.

Aerial views of both Proving Grounds reveal a wonderful assemblage of curves, hills, straights, and other selections of test roads which would offer a choice of road racing circuits beyond the fondest dreams of the enthusiast.

The manufacturers would find the sports car clubs ready and anxious to cooperate in conducting a test road race by which problems involved could be ascertained and evaluated. Were it impossible to accomodate great numbers of specators, club events with attendance by invitation only would be possible.

A circuit over the test hills of the proving grounds would provide a hill climb without equal. Both sports car and hot rod enthusiasts would welcome a chance to make timed acceleration runs on the straightaway strips.

It is only natural that the automobile manufacturers should ask, "What's in it for me?"

"More than you think," might well be the answer. Millions are spent on institutional and prestige advertising by these firms—how much better this could be accomplished were the proving ground activities to become front page news thruout the world. The attendance of spectators would probably be in six figures—all on the publicity man's home base.

To really accomplish this arrangement in a manner appropiate to the grandeur of the American automotive industry, yet another plan is offered: Why not build, thru cooperative effort of *all* manufacturers and motoring organizations, a super, super proving ground incorporating a super speedway (such as discussed in the June issue) with all other facilities in scale. Available to all, surely such a plan would offer new horizons of research and development to the American automotive engineer. As such a location would be ideal for testing of military vehicles, and as the long straightaways could double for aircraft strips during wartime, the government might be persuaded to absorb a portion of the cost. Gate receipts from premier events would make the operation self-sustaining.

With the World's Greatest Speedway available, America could regain its position as proven leader of automotive accomplishment.

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Colorful 3/4" Scale Model Hudson Miniatures' "OLD TIMER" Auto Set $3.95 Includes step-by-step Instructions Fun to Build Thrill to Own

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The Stutz Bearcat lives in stories as no other car has in all auto history! Once you assemble it, you'll be the proud owner of the most prized sports car known! Complete with plastic wheels, hub caps, head lamps, cowl lamps, radiator, horn and steering wheel. When completed, length 10½". $3.95. Ten other models:

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Hudson Miniatures' "OLD TIMERS"
SCRANTON HOBBY CENTER, Dept. 38, Scranton 10, Pa.

BRIDGEHAMPTON ROAD RACES

(Continued from page 5)

of Chicago and one of the best kept older sports cars in the country; two Bugattis; the Ford-Riley, Watkins Glenn winner last year, but not driven by its lead foot owner this time; Cadillac-Allard, 2nd in recent Suffolk County Airport Race; and Ford-Duesenberg, Palm Beach race winner, with engine reworked a bit to improve it but, as often happens, it proved not as good as before.

First lap: Collier owned, Frazer-driven Ford-Riley in lead in 1st ½ mile passing the XK-120 that got the original jump; Cole putting on a terrific bid and getting into 4th before he was locked up getting into a turn.

Second lap; Cole moved to the front with the Ford-Riley 2nd, followed by Huntoon in Ford-Duesenberg, Cunningham in Bu-Merc, Bruce Stephenson in Meyer-Special, Milliken in Dr. Scher's Bugatti 3.3 blown. Galloway spun out in his beautiful but hard riding SS 100.

Third lap: Cole moving away to 500 yd. lead, tailed by Huntoon, Stevenson, Frazer, Milliken.

Fifth lap: Cole, terrific lead of ¾ mile; Stevenson 2nd, then Milliken and Frazer. Field open now with ½ mile between 3rd and 4th car.

Sixth lap: Milliken moved into 2nd on the stretch by a hair over Stevenson. Milliken went out with car jammed in 2nd gear.

The light red, blown Healey (No. 33) was really plowing around the turns with much speed and gusto. Finally, the slide was too long and the straw bales collected the Healey. It ended on its side resting on the fenders. With spectator help, it was pushed back on its wheels, and away he went. This happened on turn coming into the stretch. The driver pulled into the pits as it was the last lap and got out, this still 200 feet short of the starting line. The announcer advised Harry Gray, driver, to hurry and finish the race. Gray caught on, dropped his Pepsi-Cola and scrambled into the car and got it across the line before anyone passed the pits. It was amusing to see him looking back as he wildly started the car and zoomed madly over the line 200 feet away.

Feature race (20 laps, 80 miles): Pace car was driven by Robert Montgomery of motion picture fame, as this was a flying start; all other races were standing starts. Montgomery gave the spectators the only accident on the straight stretch. In diving off of the road after crossing the starting line, on completion of the pace lap, Bob got in a slight slide on the grass and slid the nice new Riley roadster lightly but firmly into the spectator barrier fence. No damage, just a little paint and ruffled feelings. This race was rather steady and at terrific speed, altho not much change in positions. After the first lap the positions were Cole, Stevenson, Huntoon, Collier, Kimberly, Kulock, etc. The positions remained fairly constant until the 7th lap when Collier made a big push as Stevenson went into the pits with overheating trouble due to lean mixture. Collier passed Huntoon and moved into 2nd. He started pushing the Ferrari to catch Cole, but altho he consistently moved up, Cole had built up too much of a lead, about ¾ mile. S. Collier narrowed this down to about 10 seconds in the 18th lap but was unable to improve on it.

BOOK REVIEW

GERMAN RACING CARS AND DRIVERS

by Gunther Molter Clymer—Price $2.00

This is one of the most complete and best illustrated books yet published on German cars and drivers. The racing careers of great names such as Caracciola, Van Brauchitsch, Lang, Seaman, Stuck, Von Delius, Muller and Hasse are described and pictured in detail. Starting with an account of famous pre-war Grand Prix races and drivers, Herr Molter continues with descriptions of events up to the beginning of World War II.

The second part is devoted to the post war activities of the German motor sport which can only be described as motor racing under the most difficult conditions imaginable. All but the most avid enthusiast would be discouraged by the scarcity of cars, parts, tires, fuel and oil. The fact that German drivers and cars have figured in some notable successes in post war activities is proof indeed of German genius and causes the motoring world to look forward to German competition in International events. Future plans of Mercedes are hinted at by Neubauer, head of Mercedes racing department.

A final section is devoted to details of Floyd Clymer's trip thru Europe in 1948. "Racing Cars and Drivers" is illustrated with 300 excellent action and still photographs by Kurt Worner, Leica Photographer. While the material is excellent, many enthusiasts may object to advertising which appears on one of the rear pages.

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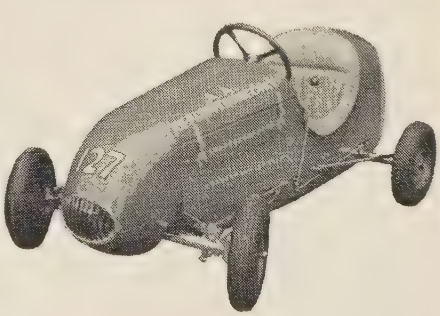

FEATURES: Hydraulic brakes, full adjustable torsion bar front end. Custom steering box with bronze worm gear and hardened worm. Alloy tubular welded frome, aluminum body, removable leather upholstering. Polished cast grill. Wheels and tires, front 4x8.00, rear 5x8.00. Choice of 3 or 5 gallon gas tank. Borg Warner rear end. 4.9, 5.1, 5.3, 6.1 gear ratios available. Specify choice. Complete with front rear and side nerfing bars. Windshield optional. If possible, specify engine for engine mounts. Available in front or rear engine models. Car displayed above has rear engine mount. Specify rear tire type. Can also be purchased in parts. All parts available. Ready to run, less engine, gear box, and drive-shaft. Price **$995,** plus $37.50 excise tax FOB Los Angeles, Calif.

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Main showroom, 127 W. Washington, Los Angeles, California. Also at Auto Accessories, Valley Branch, 6235 San Fernando Road, Glendale, California.

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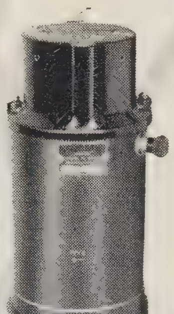

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ROAD and TRACK reserves the right to refuse any classified advertising not deemed to be of a nature suited to its interests and to determine whether advertising is of a display or classified nature.

FOREIGN CARS FOR SALE

MERCEDES BENZ 1936 MODEL 500-K Supercharged. 4 Passenger Convertible. Good condition, new top, new paint, chrome like new. Asking $2000. Will trade. John Seelinger, 525 Turk St., San Francisco, Calif.

RACE CARS FOR SALE

MILLER RACE CAR 122 cu. in. All original. Engine just rebuilt. Chrome chassis. etc. Many spares. Supercharger. P. W. Schwartz, Box 126, Suffield, Conn.

TRACK ROADSTER AND TRAILER—Mercury—Full Race. Offenhauser heads—Navarro Manifold—Winfield Cam, Kong Ignition, Stelling Gear Box—25T Body. Will transport anywhere. No reasonable offer refused. Contact Don Hausam, 226 W. Cedar Ave., Burbank, Calif. CHarleston 0-7306.

4 PORT RILEY CLASS R—1950 AAA Registered Sprint Car—Driven by Mac Hellings and Joe Garson. Completely rebuilt—$2500. Also 1½ ton Studebaker Truck Built-in tool boxes for spares—$1250. Both for $3500. Can get $300 per appearance at Eastern tracks this season. Now on West Coast. Ready to roll. Autolist, 14726 Friar St., Van Nuys, Calif.

RARE CARS FOR SALE

MARMON CLUB COUPE 1922. Fair condition, aluminum body & fenders, Spanish Morrocco leather upholstery. Wm. McDaniel, 2825 Washington, Milwaukie, Ore.

BOOKS AND PUBLICATIONS

WANTED TO BUY: Programs of "500" 1911 to 1923 inclusive, programs of pre-war 100 mile A.A.A. races with entries and results, books and articles pertaining to big car racing in United States and abroad, photographs of pre-war 100 mile A.A.A. races and board tracks, also "Wall Smacker" by Pete DePaolo, 16 mm. sound or silent films on any kind of auto racing. Write Chapman S. Root, P.O. Box 209, Terre Haute, Indiana, giving description of material and prices.

MOTOR ENTHUSIASTS! Send for free catalogue 500 books about automobiles, steam cars, motorcycles and racing. Vivian Gray, Lucastes Avenue, Haywards Heath, England.

MERCEDES BENZ 540K Conv. Coupe. Glossy 5x7 photograph as shown on Page 16 April ROAD and TRACK. Price 50c. Autolist, 14726 Friar St., Van Nuys, Calif.

WANTED TO BUY All types of material pertaining to "Big Car" racing in the United States, books, photographs, newspaper clippings, 8 or 16 mm films. Also any material pertaining to Grand Prix racing in Europe. Am trying to replace my collection which was destroyed by fire. Write Chapman S. Root, Post Office Box 209, Terre Haute, Indiana giving description of material.

MOTOR MAGAZINE. Special British Automobile Show Number gives pictures and description of all British cars at the Show as well as the regular interesting features of **MOTOR.** Send 50c. Enthusiasts' Publications, Box 409, No. Hollywood, Calif.

1950 SPEED DIRECTORY—Lists over 300 names and addresses of manufacturers, distributors, and dealers of speed equipment. The most complete listing of speed industry yet to be published. 50c postpaid. Enthusiasts' Publications, Box 409, North Hollywood, Calif.

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IOTA—The Magagine for Amateur Builders of Small Race Cars. IOTA gives practical approaches, details and pictures of cars and bodies as well as results of 500 cc competition in England. A MUST for the man who is contemplating a 500 cc or T.Q. Midget. IOTA $3.50 per yr.; sample copies 35c ea. ROAD and TRACK, Box 409, North Hollywood, Calif.

ENGLISH "AUTOCAR," about 45 copies, from 1920 to 1936, about 35 copies of the English "The Motor Cycle," same years. These are the large and impossible to find show issues; condition good to fair. Offer nearest $100 takes the lot. Edward J. P. Cunningham, 1924 Carmona, Los Angeles 16, California.

PHOTOGRAPHS

SOUTH AMERICAN road race pictures, including races with European drivers. Also other stock car, sports car and specials races. Grand Prix type races include Ferraris, Maseratis, Alfa Romeos, etc. Size of pictures 5 x 7 glossy. Price 40c each. Dr. Vicente Alvarez, Bernardo De Irigoyen 652, Buenos Aires, S.A.

DUESENBERG PHOTO ALBUM—Ten 5 x 7 photographs of Model J's. Open and closed bodies by Rollston, Bowman & Schwartz, Murphy. Weyman, and others. Price $2.50 Autolist, 14726 Friar St., Van Nuys, Calif.

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ROLLS ROYCE P-1 sedan, being stripped for parts. What do you need? Also have P-2 chassis in excellent condition. Make offer. Autolist, 14726 Friar St., Van Nuys, Calif.

M.G. "VAL-VIN-HED" SILENCER. Canvas covered oil cushion silences and reduces moisture condensation. $2.00 postpaid. George E. Hiscott IV, 1324 Sherman Ave., Evanston, Ill.

CALIFORNIA CUSTOM ACCESSORY HEADQUARTERS. Buy direct from original designers and save. Solid hood panels, grille panels, chrome dash panels, electric push button door, trunk conversions, chrome motor accessories, speed equipment, lowering kits, etc. Custom Catalog 25c. Eastern Auto, 3319R South Grand, Los Angeles 7, Calif.

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OVERHEAD VALVE CONVERSION KIT (pushrod) for Lycoming straight eight engine. The type desired fitted the HC, HF, FD, and FF blocks used on 1929 Auburns, L-29 Cords, and racing hydroplanes. Hamilton Fish, Jr., Blacksburg, Virginia.

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RACE EQUIPMENT for all cars. Engines, heads, manifolds, carburetors, mufflers, etc. Speed literature $1.00—refunded first order. Lee Motorcraft, 1412-F Great Northern Bldg., Chicago 4, Ill.

SPEED EQUIPMENT & Accessories—A step ahead in the automotive field. For lists write Bill Von Esser, 3307 W. Irving Park Rd., Chicago 18, Ill.

MERCURY CARBURETOR FOR FORD V-8. This adaptor permits you to install 1949-50 Mercury carburetor on any 1932-1948 Ford V-8. Adaptor sent postpaid in U.S.A. for $4.75. LEE'S SPEED SHOP, 1143 E. 14th St., Oakland 6, Calif.

MISCELLANEOUS WANTED

WANT issues one, two, three and four of **Road and Track** magazine. Will pay 300% bonus for perfect copies. Hal M. Resch, 1395 Vine Street, San Jose, California.

Due to the volume of inquiries, Autolist is suspending its listings for this month. However, information and listings may still be obtained by addressing Autolist, 14726 Friar St., Van Nuys, Calif.

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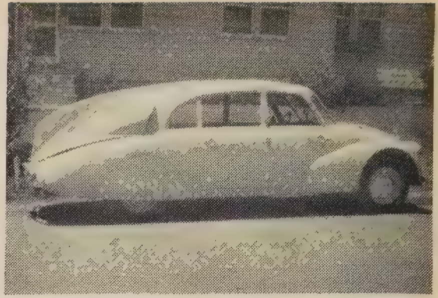

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TATRA—1941 Sun Roof Sedan in perfect condition. Last model built. V-8 air cooled rear engine. Completely overhauled. Independent suspension all around. New silver gray paint job—16" wheels, tires good. Price $1500 cash. S/Sgt. H. C. Vogel, Qtrs. 1012-A-45, Hamilton A.F.B., Calif.

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By Sedanette

CHRYSLER is ready to abandon their squarish "utility" styling and climb on the Buck Rogers design bandwagon. A super-secret styling group, headed by *the* man who started the present trend, is working on the new line.

GENERAL MOTORS has been playing around with a small sports car but nothing serious has been done. GM Styling is building two very wild super-duper ultra-streamlined so-called "sports" cars as "teasers" similar to the Buick roadster built for Harley Earl some years back. Entirely different, one will be powered with a V-8 Cadillac engine and is for Harley Earl, while the other will have an experimental Buick V-8 under the hood and will go to Charley Chayne, Buick Chief Engineer.

PACKARD will announce their new models, completely restyled, this fall. For once, the departments agree and everyone at Packard is quite pleased with the new design.

CROSLEY has been "snuggling-up" to Sports Car Club of America members in an attempt to find out what must be done to the Hot Shot to make it acceptable as a real sports car. Alec Ulmann's Italian re-built "Crosulital" is being watched with interest. Four-speed gearbox may soon be optional.

CHEVROLET long ago dropped a V-6 engine project but it is now being considered for the OLDSMOBILE and PONTIAC to replace the present in-line six.

CHRYSLER plans for the 1951 models were hard hit by the strike. Announcement has been delayed until after New Year's.

NASH has a "one-two" punch in the new Rambler. The most expensive model, loaded with accessories, was announced first. As the sales "cream line" goes down, the car can be stripped to meet a lower price. The two-door hard top, to be announced later, will sell for around $1200 in Detroit. A station wagon will complete the line.

KAISER will have a very cute "Continental" style Henry J. convertible, exposed spare wheel and all, for competition to the Rambler. Sports car enthusiasts have noted that the Henry J. chassis has dimensions and specifications suitable for building a special.

WILLYS will soon (?) announce their new small car, said to be styled in a "Continental manner"—interesting to note the revival of the theme set by the 1940-1942 Lincoln Continental—outside spare wheel mounts for Ford, Mercury, Plymouth, and Chevrolet have become the rage.

FORD announced their automatic transmission sooner than expected. Activities in this field includes a new CADILLAC single phase torque converter that locks into high and a rumored change from fluid coupling to torque converter by CHRYSLER.

Meanwhile, the other transmission builders and automobile manufacturers are investigating all the other forms of automatic gear boxes. The French Cotal electrical box and other European developments are coming in for their share of scrutiny. Also under investigation is the electro-magnetic fluid clutch developed and announced by the National Bureau of Standards a couple of years ago. Seems no stone is being left unturned in the search for new ways of transmitting power from the engine to the back wheels.

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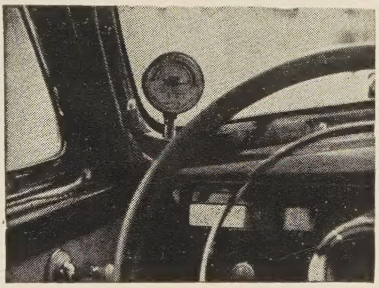

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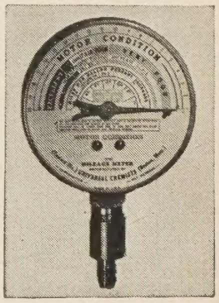

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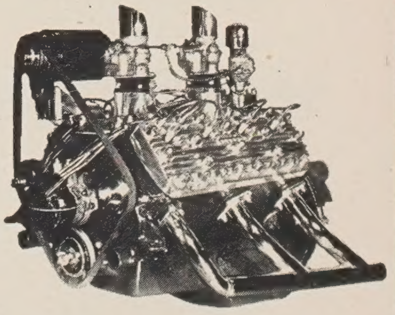

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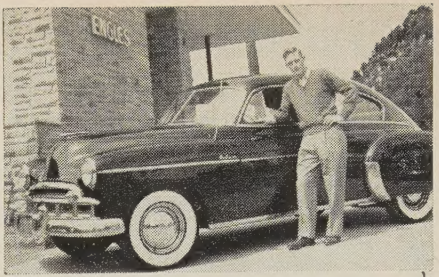

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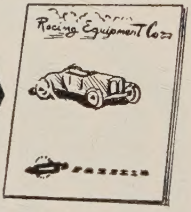

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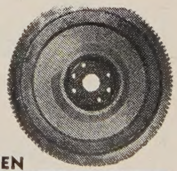

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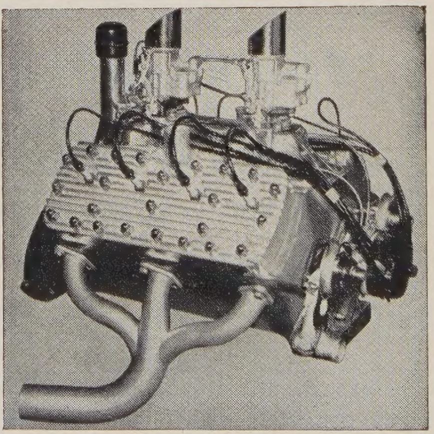

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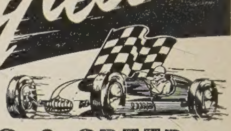

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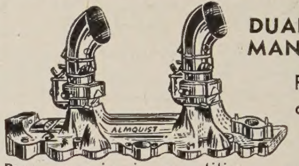

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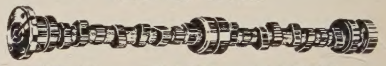

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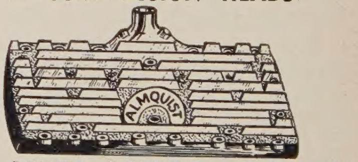

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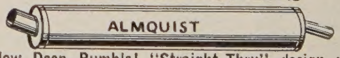

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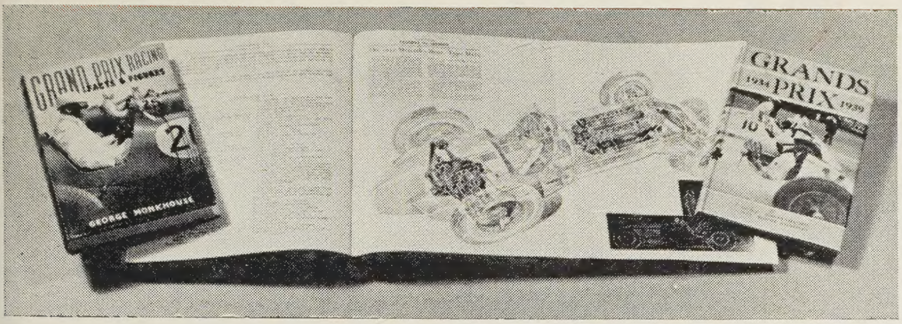

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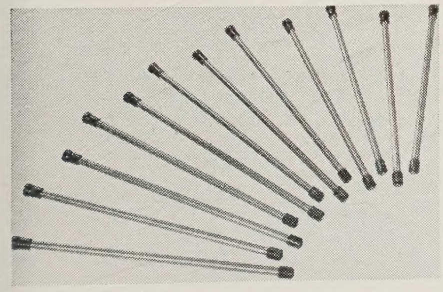

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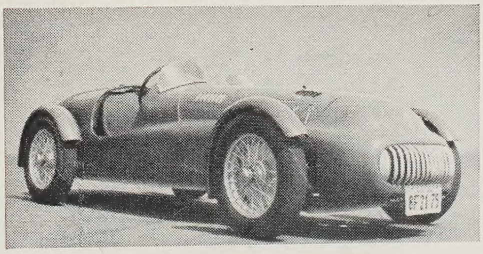

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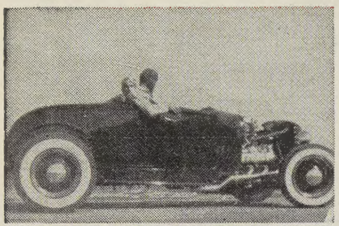

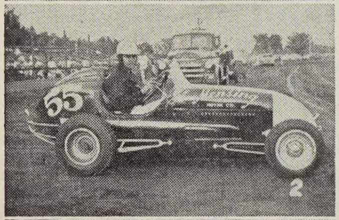

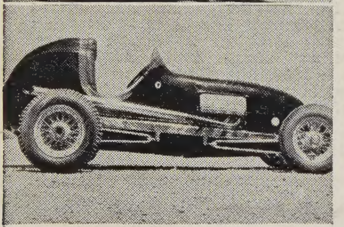

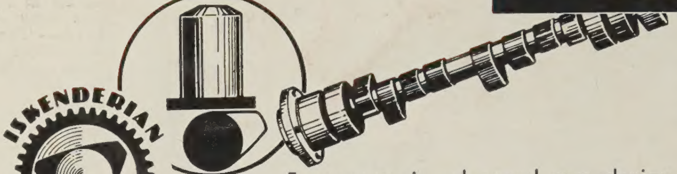

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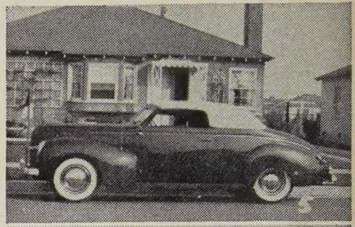

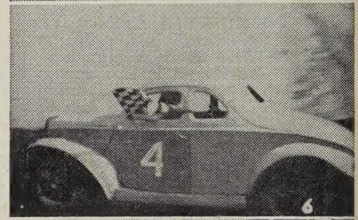

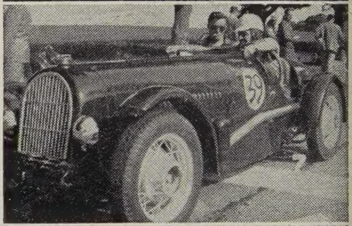

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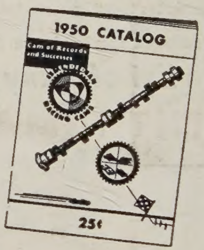

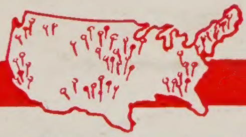

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5231 Ponce Lane

Cleveland 5, Ohio
Midwest Racing Equip.
6883 Broadway

Toledo 5, Ohio
Herrick's Speed Equip.
2077 Starr Ave.

Youngstown, Ohio
Youngstown Speed Shop
68 Shadyside Dr.

Portland 20, Oregon
William Schnell
3409 N.E. 87th Place

Allentown, Penn.
Jenkin's Racing Equip.
R. D. 1

Exton, Penna.
Speed Craft Enterprises
Box 15

Oxford, Penna.
Holmes Machine Shop

Reading, Pennsylvania
Joe Wolf
739 Gordon St.

Greenville, S. C.
Smith's Auto Parts
Easley Highway

Naval Base, S. Carolina
Robinson's Speedshop
134 Chestnut Ave.
Whipper Barony

Memphis, Tennessee
Jordan's Speed Shop
2095 York

Lubbock, Texas
Johnnie Johnson
2301 Seventeenth St.

Salt Lake City, Utah
Ernie Burgess
367 West 33rd St.

Salt Lake City, Utah
Porter Muffler Shop
3094 S. State St.

S. Norfolk, Virginia
White's Auto Service
1120 Bainbridge Blvd.

Redmond, Wash.
Mickey Shelton
P. O. Box 308

Seattle, Washington
Bills' Speed Shop
4000 Airport Way